AMERICAN ARTISAN and Hardware Record

OL. 73. No. 20. CHICAGO, MAY 19, 1917. $2.00 Per Year.

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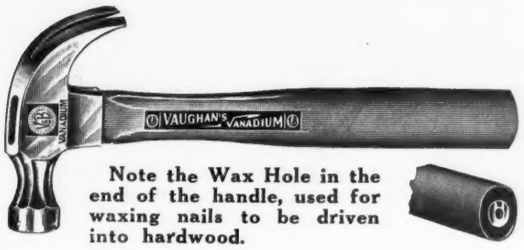
V&B

V & B TOOLS

V&B

VAUGHAN'S VANADIUM NAIL HAMMERS



Note the Wax Hole in the end of the handle, used for waxing nails to be driven into hardwood.

are the **Toughest, Strongest Hammers** made. **Vanadium** cleanses the steel and a tool free from impurities is the result.

VAUGHAN'S VANADIUM HAMMERS are made of good **VANADIUM** steel properly treated and tempered.

Made with the **NON-SLIP CLAW,** they will firmly grip any size nail from brad to spike.

The faces of the hammers are crowning and can be used on the highest finished wood without marring.

V & B NAIL SETS

SQUARE HEAD NAIL SETS

Owing to the Square Head Design, these nails will not roll on uneven surfaces. All have Cup Points and are individually tested, knurled and polished.

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ALL V. & B. TINNERS' RIVET SETS

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Our steadily increasing business from dealers everywhere is good proof that our customers desire the best quality that can be produced.

Every article we manufacture is closely inspected and severely tested before leaving our factory.

Today is the time to take advantage of our guarantee and many years of successful manufacturing experience.

Give yourself the assurance of satisfied customers by giving your customers satisfactory tools.

WRITE TODAY FOR OUR COMPLETE CATALOG SHOWING FULL LINE OF HIGH GRADE TOOLS

VAUGHAN & BUSHNELL MFG. CO.

MAKERS OF FINE TOOLS

2114 Carroll Avenue **CHICAGO, ILLINOIS**

ALPHABETICAL INDEX AND CLASSIFIED LIST OF ADVERTISERS, 52 and 53.

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DIV. OF AMERICAN STOVE CO.
ST. LOUIS, MO.

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because the smoke pipe passes up through the center of the vent pipe, and **forces** the vitiated air out of schoolrooms provided with the

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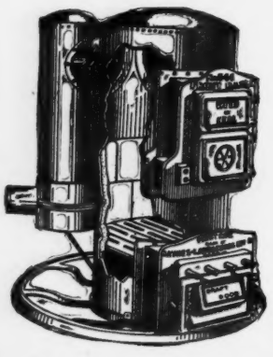

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Easiest selling and most satisfactory furnace made. We help you sell—first by all sorts of "dealer helps," then by a National Advertising Campaign in which we are spending thousands of dollars.

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3

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Representative of
The Stove Tin Hardware
Heating and Ventilating Interests
PUBLISHED EVERY SATURDAY

AMERICAN ARTISAN and Hardware Record

Address all communications and remittances to
DANIEL STERN
Publisher and Proprietor
910 South Michigan Avenue
Chicago Illinois

TERMS OF SUBSCRIPTION IN THE UNITED STATES AND ITS POSSESSIONS (Invariably in Advance) ONE YEAR POSTAGE PAID $2.00
FOREIGN COUNTRIES ONE YEAR POSTAGE PAID $4.00 CANADA ONE YEAR POSTAGE PAID $3.00

Entered as Second-Class Matter June 25 1885 at the Post Office at Chicago Illinois under Act of March 3rd 1879

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Do Not Heed Calamity Howlers.

WITH THE cry of calamity which is being used by so many of the daily papers, it is well for the merchants and all who are engaged in all lines of trade to maintain their equanimity.

Do not be misled by the calamity shouters who evidently (at so much a line) think America is going to the dogs.

Do not be excited or lose your nerve, for if there was ever a time in our commercial careers when the business men of the country should stand together with calm judgment and deliberation, it is now when we are passing through this great war crisis.

There is absolutely no need of any excitement. Business is going to be better a great deal this year in most all lines, than it was last. The opinion of those in a position to know, is, that the war will not make the slightest difference in the business of the country unless the "calamity howlers" in some of the daily papers start a panic, and that will be impossible if we all stick together.

Prices may be higher and the ability to get goods curtailed but there is no doubt that there will be just as many goods bought and sold and that the rank and file of our citizens will have just as much money to spend as they have ever had before. In fact, in many lines of trade, there will be an increased production and sale, as for instance, it has been estimated that 30,000,000 people in the United States have become interested this Spring in the production of food. They are starting to produce for themselves in their own little garden plots. Just stop and think what that means in the increased sales of hoes, spades, rakes and garden implements!

This is but one angle. There are many others, so it behooves us all to keep our feet on the ground and adopt the policy and slogan of the English, "Business As Usual."

Turnover, Profits and Costs.

IN MERCHANDISING circles we hear a great deal about speeding the "turnover" so as to increase the profits on our investment and there is room for much improvement along this line.

There is one kind of "turnover," however, which is in need of restriction rather than speeding up, and very vigorous at that.

We refer to the "labor turnover," the expression that is used to define the proportion between the average number of employes of a concern and the total number that has been hired during a year. The greater this turnover is the less will also be the profit realized, owing to the fact that it costs a considerable amount to "break in" new employes even though they may be "experienced" in their line of work.

For example, it was found in a tool manufacturing plant that the average work turned out by a new man during his first six weeks was less than half of that of the employe who has served for some length of time, and that the actual overhead charge for the average new man was at least as high as that for the skilled worker, the word "skilled" being used simply to indicate the employe who had worked in the plant for considerable time.

In other words, the larger the number of men who quit or were discharged in a given time, the greater was also the average cost of production.

It is easy to understand from this that the "hiring and firing" of employes cannot safely be left to men who are not temperamentally fitted for this particular phase of supervision, and that in most cases it will be better if the foreman of a shop or a factory department were relieved of this responsibility.

As a matter of fact that is the real crux of the matter: The average foreman may be just the sort of man who can keep his men working at proper speed, but he is also more than likely to be just the sort of man who knows nothing about fitting the applicant into to the place where the latter will do the best work, and at any rate, if he has to devote considerable time each day to interviewing applicants that time is lost so far as supervision of his department is concerned.

So there is now a new official in our efficiently operated plants—the employment manager whose duties are not merely to hire men, but to fit them into their proper places; to transfer them from one position to another if they show indications of being better fitted for work other than that for which they were at first employed; to prevent so far as possible "quitting on the spot" because of fancied or real differences with the "working boss."

As a result of this departure it was found in a plant referred to in the foregoing, that not only did the employes average higher earnings, per day, but at the same time the cost of production was reduced even though the total working hours during the week were cut down from 57½ to 52½ hours.

Evidently the Committee on Industrial Betterment of the American Hardware Manufacturers' Association has found a very profitable field for its endeavors, and judging from what has already been accom-

plished along this line it is safe to say that the manufacturers can well afford to give considerable attention to this important matter.

Incidentally also, some manufacturers may herein find the explanation for their inability to compete with others in similar business in price or quality, for it goes without saying that the employe who works steady at the same kind of work will produce a better quality of work than one who flits from one shop to another.

Tremendous Demand for Garden Hardware.

THE FALLACY that the United States' entrance into the European War would disrupt the business interests of the country, was never better illustrated than by the tremendous demand which is now going on all over the country for garden tools. This line of hardware will sell as it has never sold before and it is extremely doubtful if the manufacturers can keep up with the demands which are being made upon them.

Charles Lathrop Pack, president of the Emergency Garden Commission of Washington, D. C., is authority for the statement that more than 30,000,000 Americans have joined in the Garden Movement and are devoting their spare time to the production of small vegetables.

In Chicago alone, between seven and eight thousand acres have already been plowed, mostly in small plots, and there is no doubt, double this amount of acreage will be tilled during the coming summer in that city.

This means a tremendous amount of business to the merchants who handle small garden tools and it behooves them to se that they are properly stocked at this time. The demand has only started and will last well into the summer. If you have not a generous supply of garden tools on hand, order them at once and then let your buying public know about it. All that is necessary is for them to know where to buy and all other things being equal, you will get a generous share of that trade. Undoubtedly in your own immediate neighborhood, there are hundreds of persons engaged in cultivating garden plots. Do they know that you carry the necessary tools for that work? If they do not, get busy and tell them.

Halt the Policy of Destructive Taxation.

WHILE THE American business men and the leaders of our industry and commerce have responded to the government's appeal for cooperation in the prosecution of the war most nobly, it is evident that the gentlemen who compose the members of the House Committee on Ways and Means and who are foremost in formulating our war tax schedule, have not deemed these leaders in our commercial life of sufficient importance to be interviewed, regarding their plans for taxation.

The result of all this is a great deal of complaint on all sides, much of it justifiable regarding the proposed increases in taxation.

In short, while American industry has risen splendidly to its duty and opportunity and has thus demonstrated its loyal efficiency, it has done more, in that it is emphasizing the short-sightedness and folly of the members of the administration who are recklessly proposing destructive taxes, as retroactive taxes on capital and income which has already been invested or consumed and taxes on raw materials. It is very evident that these gentlemen have not the slightest knowledge of what they are about to do. It is of the foremost importance that war taxation should not be so placed on American enterprises at the beginning of the war as to crush or seriously depress them. It is well to avoid the evils of too early or too great a borrowing capacity for our government. Sudden drastic taxation is liable to produce an effect from which the business of the country will have extreme difficulty in recovering.

It is evident that the members of the House Committee on Ways and Means have not taken the trouble to consult representative manufacturers and others with reference to the propriety of these dubious measures of emergency taxation. The wonderful efficiency and loyalty of American industry and its patriotism is but poorly paid when a policy of crippling the industry and lowering the production and destroying capacity through the imposition of impossible forms of taxation is invoked.

It is evident that if we are to fight a successful war, the nation must conserve its forces of production and not dissipate them. Desperate measures will not win, nor will stupidity be of any advantage in increasing our war funds.

Be Frank With Your Banker.

IT HAS BEEN stated so often that the saying is almost trite, that if the merchant will only have it so, he can make his banker his best business friend, but for all its triteness the saying is as true today as it ever was, and there are thousands of successful hardware merchants and other business men who owe a considerable share of their success to the timely aid they had at some critical period in their business history received from their banker.

But to obtain this cooperation and to maintain it, two things are necessary:

First, the merchant must be absolutely frank with his banker.

Second, he must always live up to his promises.

As an eminently successful automobile manufacturer who in nine years has built up a business of $68,000,000 from a starting point of practical bankruptcy, puts it:

"Tell only the truth to your banker and make him believe in you. Bluffs to your banker mean ruin. And as a corollary, deal only with a bank whose officers appreciate the truth when they hear it; some bankers regard every statement, oral or written, as untrue until it is proved true."

Dealing frankly with a banker does not mean that you are to let him manage your business. The banking relation is purely one of purchase and sale; it differs from the ordinary sale only in the fact that you are dealing in money instead of goods representing money.

The mere fact that you offer yourself as collateral does not change the situation; if you do not regard

yourself as the best collateral in the world, you have not enough confidence in yourself to warrant borrowing money. But banks do not always realize the true situation—or rather they did not; now banking competition is becoming so keen that few institutions can afford to maintain the old self-sufficient attitude.

And with this changed attitude of the banker, the really progressive merchant who is honest and has executive and managerial ability can in practically every case be certain of the aid that he may need at times in order to make the turn of the road that leads to greater success.

RANDOM NOTES AND SKETCHES.

BY SIDNEY ARNOLD

Orison Swett Marden, whose name is well known as a writer on character building, in a recent article in the *Chicago Daily News* makes a statement which in my opinion is one of the finest expressions of the fact that what Life is to us depends in by far the largest measure upon ourselves.

Those of my readers who have formed the habit of the perpetual, chronic pessimist or grouch have only themselves to thank for the miserable lives they lead, for it is due to their falling into the habit of always looking for and expecting trouble that they have such a bad time in this beautiful world of ours.

Take the advice of Dr. Marden, as given in the following two paragraphs:

"The mind that always expects the best to come to it, that is always looking for the best, believing in the best, striving for the best, accumulates a magnetic force for attracting its desires, for drawing to it that which is like itself.

"It is just as easy to form the habit of expecting the best, of expecting health, success and happiness, as it is to form the habit of expecting trouble, expecting ill-health, disease, failure in our undertakings, all sorts of afflictions and unhappy conditions. Think creative, happy thoughts and your harvest of good things will be abundant."

* * *

Charles S. Meacham, Manager of the Chicago branch of the Lovell Manufacturing Company, and a friend attended a reception some time ago. During the evening the friend noticed a certain woman and said to Charlie:

"Who is that impressive-looking woman over there?"

"That's Mrs. Austin," was the reply. "She's a remarkably strong-minded woman. It is said she commands a large salary."

"Indeed," said the friend, reflectively as he looked at the woman with interest. "How does she earn it?"

"She doesn't earn it," said Charlie. "Her husband earns it, and she commands it."

* * *

It is to be regretted that some individuals are so constituted that when some stroke of fortune places them in positions where they may help promote a meritorious movement by cooperating with others, they are seized with an exaggerated idea of the value of their own judgment as against that of others who very often are better qualified to judge as to the proper means of accomplishing the object sought, and thereby, if not totally prevent, at least hinder and handicap its early accomplishment.

I see instances of this almost every day. For example, there is the retailer who insists upon keeping his store open late evenings when the great majority of the other dealers are willing to close at a certain uniform hour. He can gain nothing in the long run, but often he keeps everybody else from having a little leisure time with their families.

Then there is the member of a committee whose exaggerated valuation of himself does not allow him to listen to what any one else may have to suggest: He must have the first say, the next say and the last say; no one's opinion but his is worth anything, and if he can't have his own sweet way, he not only won't play in your yard, but he won't let you play at all.

That sort of individuals are probably of some use in the economy of life, or they wouldn't have been placed among us, but they are very disagreeable to have around, just as is that little animal with black shiny fur that has a white stripe on its back.

* * *

W. J. Keene, of the Chicago Spring Butt Company, was "approached" one day by a seedy looking individual who was trying to "touch" him for the price of "something to eat."

Keene, like the good fellow he is, gave him a quarter and then said, "Why don't you brace up and have some confidence in yourself, and you will amount to something. If you have faith you can move mountains."

Having secured the money, Mr. Panhandler edged away mumbling, "Oh, well. Who wants 'em moved, anyway?"

* * *

There are two classes of men for whom few of us have much use.

One is the chronic "kicker"—who never sees anything of which he can approve.

The other is the "whiner"—who sees everything through blue tinted glasses.

Both kinds are a handicap to real progress, because they kill the enthusiasm which is necessary to the aggressive work that must be done if conditions are to become better—or at least they act as a cold blast on top of a fire we are trying to kindle.

One of my friends sends me the following verses that express this idea very finely:

The Whiners.

I don't mind the man with a red-blooded kick
  At a real or fanciful wrong;
I can stand for the chap with a grouch if he's quick
  To drop it when joy comes along.
I have praise for the fellow who says what he thinks,
  Though his thoughts may not fit in with mine,
But spare me from having to mix with the ginks
  Who go through this world with a whine.

I am willing to listen to sinner or saint
  Who is willing to fight for his rights,
And there's something sometimes in an honest complaint
  That the soul of me really delights.
For kickers are useful and grouches are wise,
  For their purpose is frequently fine,
But spare me from having to mix with the guys
  Who go through this world with a whine.

AMERICAN ARTISAN

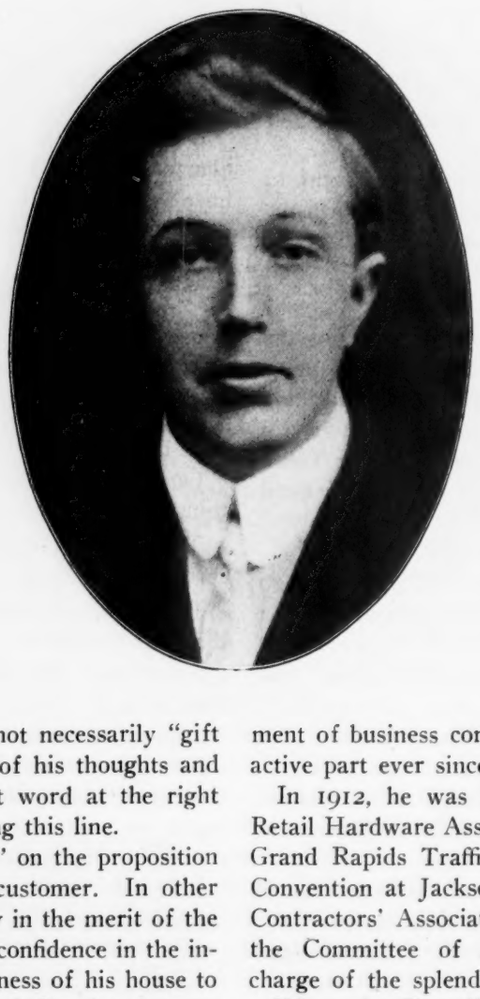
EARL EDWARD BEHLER.

Those who are of the fraternity of traveling salesmen may be divided into two classes—the first being composed of men who draw salaries and expenses for writing down on their order books just what the buyer may happen to think of and be quite ready to purchase without any urging, while in the second are counted only those who by force of their personality induce buyers to place orders for items or lines which at the start they may not have even thought of as profitable investments.

The first class are commonly referred to as "order takers," or "dummies."

The second class consists of the real salesmen.

To be or to become a real salesman requires a development of character that will make for success in almost any condition or environment. Much of this development is of the sort that depends entirely upon the man himself.



At any rate, unless he puts himself through a real course of self-training in addition to the training he is supposed to receive from his salesmanager, there is little reason to expect that he will reach a very high position in his profession, for real salesmanship is by no means attained by chance or without much personal study and hard work.

The successful traveling salesman, as well as the successful "inside" salesman, must have certain qualifications which are fundamental: He must have an easy manner of conduct and expression—not necessarily "gift of gab," but rather such control of his thoughts and speech that he will say the right word at the right time. He must train himself along this line.

Furthermore, he must be "sold" on the proposition he is to present to the possible customer. In other words, he must believe thoroughly in the merit of the line he carries and have complete confidence in the integrity, the ability and the willingness of his house to serve those who by his efforts are induced to become customers of his employers.

If he finds that he cannot depend on cooperation in this respect from his firm then the best thing he can do is to make a change as quickly as possible.

But if he has it in him, he will soon find a connection where such cooperation will make it possible for him to be of real service to those with whom he does business, and then his success is assured. The main point is that he must furnish the foundation for the structure of his success by his own fidelity, by his own knowledge of and faith in his line, by his own aggressiveness, by his own willingness and ability to be of real service to those who are to buy through him.

The foregoing remarks are particularly fitting in the case of Earl Edward Behler, the subject of this sketch, for he is a good example of the thoroughly efficient traveling salesman.

Our friend is still a young man, having been born March 29, 1883, in Lowell Township, not far from Grand Rapids, Michigan. He attended the local grammar and high schools and after several years spent in learning the business he established in 1907 the firm of Behler & Cox at Grand Rapids, which conducted a retail hardware store with a sheet metal shop in connection.

In 1913 Mr. Behler joined the forces of W. C. Hopson & Company, Grand Rapids, filling an inside position, and three years later "went on the road" for the same concern, "covering" the state of Michigan. He knows his line, believes in his house, its merchandise and its ability and willingness to serve its customers, so it is no wonder that he is "making good."

In affairs connected with movements for the improvement of business conditions Mr. Behler has taken an active part ever since he started in business.

In 1912, he was President of the Grand Rapids Retail Hardware Association. He is a member of the Grand Rapids Traffic Association and at the recent Convention at Jackson of the Michigan Sheet Metal Contractors' Association was Secretary-Treasurer of the Committee of Associate Members which had charge of the splendid entertainment.

When the Traveling Salesmen's Auxiliary to the Michigan Sheet Metal Contractors' Association was organized into a permanent body, our friend was again chosen as Secretary-Treasurer, so it is easy to understand that he is "in good standing" with the fraternity of traveling salesmen.

HALL OF FAME

GEORGE T. PRICE.

From time immemorial the axe has been one of man's important tools—for use in peaceable pursuits or for battle. The Indian of North America and the Norsemen of Europe used the axe for cutting down the young trees from which they built their shelter; when they went on the hunt the axe was always their companion, as were their bow and arrow.

At first, the axe was nothing more than a piece of flint stone more or less carefully chipped with another stone to produce an edge, but even in this primitive form, tied with thongs of rawhide to a stick of wood, it was a great help to man, and how universally it was used can be seen from the great multitude that has been found of these flint axes in the "Kitchen-hills" of the Scandinavian kingdoms especially.

These "hills," by the way, came into existence from the fact that the old Norsemen had the very sensible idea that refuse from cooking, etc., should not be allowed to be thrown here and there, but must be deposited in certain places near the settlements and covered with earth, so little by little the heaps of refuse and earth grew until hills were formed, sometimes as high as 100 feet.

When a flint axe or flint knife was no longer fit for use it was thrown on the heap, but just as we have picnickers today leave silver knives and forks on the ground where they have eaten, so it frequently occurred that a perfectly good flint axe was inadvertently dumped with the refuse, and when one of these perfect axes is found in such a "Kitchen-hill" it is treasured and placed in a museum and regarded as an article of considerable historical interest.

Later on came the bronze axe, then the iron axe and later the steel axe, and with the development of firearms, swords, etc., the axe grew into an implement of peace, and after the fourteenth century very few pictures can be found in which the battle axe appears as one of the accoutrements of a soldier, although during the present war many uses have been found for the axe, such as the cutting of wire entanglements, etc., and of course, in the engineering branch of the various armies the axe is a part of the regular equipment even if not as a weapon of offense.

The making of axes has at all times been an art. The battle axes of old were beautifully shaped and polished. The carpenter's axe of today is carefully balanced, and the steel hardened and tempered can be sharpened as keen as a razor edge.

Among the men who have become prominent in the manufacture of axes in the United States is George T. Price who was born in 1869 in Lexington, Kentucky, famous among other things for its fine race horses.

When he was seven years of age he moved with his parents to Louisville, Kentucky, where he attended the public schools, graduating from high school when he was about 18 years old.

He then started to work for the Kelly Axe Manufacturing Company which was at that time located at Louisville, and he has been associated with this Company almost continually ever since—going with them when they moved from Louisville to Alexandria, Indiana, and also when in 1907 they located their plant at Charleston, West Virginia.

George has thus spent nearly thirty years in the axe business, and he is at the present time Vice-president of the Kelly Axe Manufacturing Company and also Vice-president of the Kelly Handle Company.

He has reached these high positions by dint of hard work, close application and exercise of his clear thinking mind, serving in the factory, the office and as a traveling salesman. Most of his traveling has been in the southern states and because of this he has for several years been a member of The Old Guard.

Of late his duties have been confined more to the executive work in the factory and office, although he visits the principal jobbing centers several times a year.

George could, of course, not be expected to be allowed to use all his energy and executive ability in the interests of his Company, and his services have been drafted for the Executive Committee of the American Hardware Manufacturers' Association, to which Committee has was elected two years ago. He has a host of friends for he is the sort of man whom you feel instinctively that you can trust.

UP TO THE MINUTE NEWS SIFTINGS

The Economy Stove Company of Cleveland, Ohio, is being re-organized by John Herbst, formerly of the Champion Stove Company, and A. L. Gassett, formerly of the Economy Stove Manufacturing Company. They have secured the premises at 2108 Superior Viaduct and will soon have ready for the market a line of gas stoves, parlor grates and gas water heaters.

SOUTHERN STOVE MANUFACTURERS HOLD QUARTERLY MEETING.

The quarterly meeting of the Southern Association of Stove manufacturers was held at Evansville, Indiana, Tuesday, May 15. The Association includes stove manufacturers in Indiana, Illinois, Missouri, Kentucky, Tennessee, Georgia and Alabama. B. E. McCarthy of Nashville is president of the Association and W. H. Cloud secretary. Trade conditions were discussed and the concensus of opinion appeared to be that pig iron and other requisites for stove manufacturing have not reached their high water mark.

GOVERNMENT IN MARKET FOR STOVES AND WARM AIR HEATERS.

Stove and furnace manufacturers are receiving communications this week to the effect that the United States Government is in the market for stoves and warm air heaters to heat the 30,000 cantonments which the Government is establishing at the different training camps. It is expected that no one manufacturer will be able to furnish this enormous amount of heaters, so manufacturers all over the country are invited to send specifications of the number, styles and prices of those they can furnish.

TRADEMARK FOR RANGES AND HEATING STOVES.

Under serial number 102,130, copyright has been granted to the Union Stove Works, Peekskill, New York, for the trademark shown in the accompanying illustration. The particular description of goods is Gas Cooking Ranges, Gas Heating Stoves and Combination Coal and Gas ranges. The Company claims use since January 1, 1917, and the claim was filed March 13, 1917.

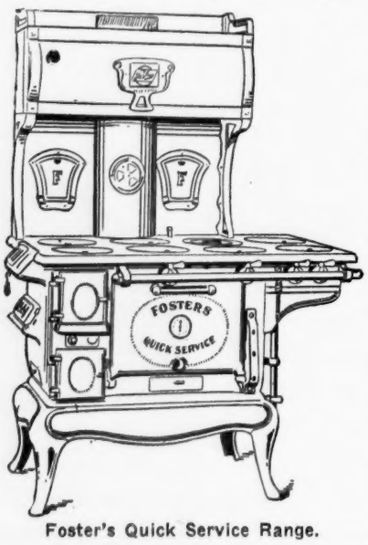
102.130

STOVE SALESMEN OF NEW YORK STATE TO HOLD ANNUAL OUTING, JUNE 30.

The Entertainment Committee of the Stove Salesmen's Association of New York State, of which F. A. Feld is Chairman, announces that the Annual Outing and Games of the Association will take place at Dexter Park, Woodhaven, Long Island, on Saturday afternoon, June 30th, festivities commencing at 2 P. M. The Committee has arranged a ball game between the Rangers and the Steam Eaters for a cash prize, and many other prizes will be competed for, so that the event is certain to prove highly successful.

COMBINATION RANGE GREAT CONVENIENCE IN BOTH SUMMER AND WINTER.

In featuring their new range, Foster's Quick Service, which is shown herewith, the manufacturers are supplying dealers with well-prepared circulars for distribution to prospective customers. These emphasize the great convenience of this combination coal and gas range in both summer and winter thus: "When those hot, sweltering, perspiring summer days come and your coal stove is throwing out heat that is almost unbearable, then is the time you wish you had a cool, comfortable, quick-cooking gas range. A 'Foster Quick Service' will make your wish come true. On those cold, tingling winter mornings when your kitchen is so chilly that you shiver in preparing breakfast, then your wish is, 'Oh, if I only had a coal range.' A 'Foster Quick Service' will grant that wish." The adaptability of the range to different locations and conditions is also brought out and other features are dwelt upon in an appealing manner. Dealers desiring full particulars of the range, together with advertising helps, should address the Foster Stove Company, Ironton, Ohio.



Foster's Quick Service Range.

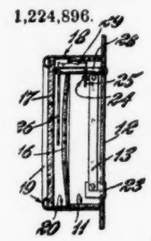
SECURES TRADEMARK FOR STOVES AND HEATERS.

The Reznor Manufacturing Company, Mercerborough, Pennsylvania, has secured copyright on the trademark shown in the accompanying illustration, under number 101,071. The particular description of goods is Gas and Oil Stoves and Heaters. The Company claims use since on or about September 16, 1916, and the claim was filed January 31, 1917.

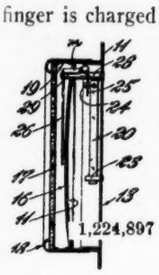
101.071

OVEN THERMOMETERS PATENTED.

Under numbers 1,224,896 and 1,224,897, United States patent rights have been granted to Charles D. Bolin, St. Louis, Missouri, for two styles of Oven Thermometers, described in the following:



Number 1,224,896: A thermometer comprising a casing with an open front closed by a dial and a heat sensitive spring inclosed in said casing and fixed to its back wall at one end, said spring having a finger at its free end, a pivot post fixed to the back wall of the casing at its inner end and projecting through said dial and carrying an idex pointer pivoted on its outer end to sweep across the face of said dial, said index pointer having an inner portion provided with an arm within the casing, said arm having an opening in which said finger is charged for turning the pointer on its pivot.



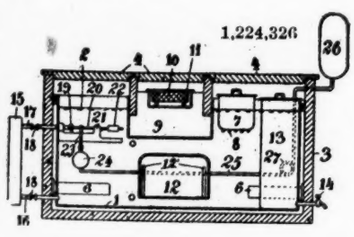
Number 1,224,897: A thermometer comprising a case, having a solid front wall and an open side at the back, a dial on the front wall of said case, a back closing the open side of said case and fixed thereto, a heat sensitive spring and a pivot post secured to said back, said pivot post projecting through the front wall of said case, a pointer rotatable on the end of said pivot post, said pointer having an arm within said case pivoted on said post and adapted for cooperation with said spring.

SELLING OF GAS RANGES A QUESTION OF SERVICE.

The selling of gas ranges is more a question of service today than ever before. Gas appliance salesmen must know the peculiar problems of the housekeeper, and above all must know the stove they are handling from every practical standpoint. The consumer's wants are not usually well defined, and that seller is most successful who can interpret those wants and satisfy them in the stove he is carrying.

ELECTRIC COOKER PATENTED.

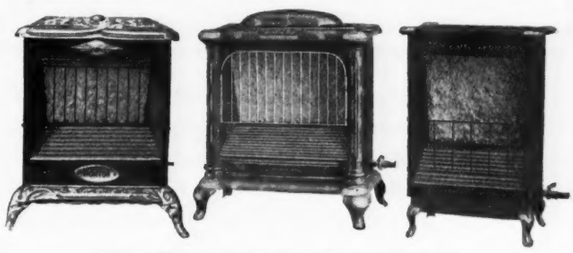
Andreas Saxegaard, Stavanger, Norway, has been granted United States patent rights, under number 1,224,326, for an apparatus for household cooking, described herewith:



A domestic cooker comprising an insulated main tank forming a water reservoir, means for electrically heating the water therein, an auxiliary water receptacle mounted in the reservoir adapted to be heated by the water in the latter, means for drawing the water from the receptacle, an oven surrounded and heated by the water in the reservoir, and electrical means for independently heating the oven above the temperature of the water, and operating as an auxiliary means for heating the latter.

ROOM HEATERS BUILT ON PRINCIPLE OF BUNSEN BURNER.

Many years ago Von Bunsen, the scientist, invented the highly-efficient gas burning appliance which now bears his name. The Bunsen Burner is used extensively in laboratory and shop work because it affords practically complete combustion of the gaseous fuel, and the same principle is embodied in the Ironton Bunsen Room Heaters, three styles of which are pictured in the accompanying illustration. In the construction of these heaters, each tube has an appliance which is said to mix the air with the gas automatically, in exact ratio to the pressure or volume of gas passing into the tubes. Thus, it is claimed, the

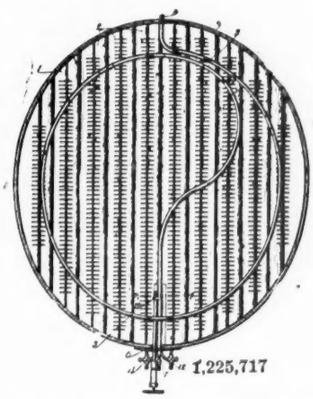


Three Types of Ironton Bunsen Heaters.

Ironton Bunsen Heaters require little attention and have clean, odorless combustion of the fuel. A secondary combustion and the arrangement of the reflecting and baffle plates are other important features which enhance the efficiency. Full particulars are given in the catalog which will be sent upon request, by the Ironton Incandescent Light and Supply Company, Ironton, Ohio.

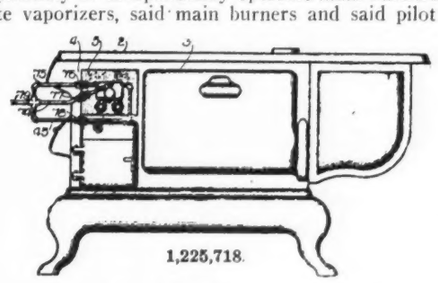
OIL BURNERS PATENTED.

Philip D. Johnson, Chicago, Illinois, assignor of one half to Charles A. Brown, Hinsdale, Illinois, has procured United States patent rights, under numbers 1,225,717 and 1,225,718, for two styles of Oil Burners described herewith:



Number 1,225,717: In combination, a main burner casting, a main vaporizer tube extending over said casting, a pilot burner below said vaporizer tube, a ring secured to said vaporizer tube, a pilot vaporizer comprising a pair of concentric tubes, the outer tube having its inner end closed and adapted to be inserted in said ring, and means to supply liquid fuel to the inner one of said concentric tubes.

Number 1,225,718: In combination a pilot burner having a separate vaporizer and a plurality of independently operable main burners having separate vaporizers, said main burners and said pilot burner



being so organized that said pilot burner conditions said main vaporizers for operation at all times, means for supplying liquid fuel to all of said vaporizers and means for individually turning on or off all of said burners independently.

WHO MAKES NUMBER 172 PERFECT GASOLINE STOVE?

To American Artisan:

Kindly advise who makes the Number 172 Perfect Gasoline Stove. Subscriber.

————, California, May 14, 1917.

THE WEEK'S HARDWARE RECORD

Of Interest to Manufacturer, Jobber and Retailer

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing western hardware and metal prices corrected weekly. You will find these on pages 46 to 51 inclusive.

The Atlantic Coast Hardware Company will lease a 7-story building which will be erected in South Boston, Massachusetts.

The William Krueger Company, hardware dealers in Neenah, Wisconsin, have increased their capital from $25,000 to $100,000.

Rogan Brothers Company, Middlesboro, Kentucky, hardware dealers, have been incorporated for $45,000 by J. M. Rogan, S. M. Reams and R. E. Howe.

The AutoStrop Safety Razor Company has appointed C. L. Birmingham manager of their Chicago office, which is located in the Republic Building, 209 South State Street.

The Lincoln Twist Drill Company, Taunton, Massachusetts, has been incorporated with $1,000,000 capital to manufacture tools, the incorporators being John C. Rice, Clement R. Ford and Otis T. Russell.

The Clayton Manufacturing Company, Bristol, Connecticut, has been incorporated with $100,000 capital to manufacture hardware. The incorporators are Oscar W. Edwards, Frederick C. Winter, William M. Bowes, Harry A. Hannum and William R. Bowes.

The sixth annual meeting of the Metal branch of the National Hardware Association will be held in the William Penn Hotel, Pittsburgh, Pennsylvania, on June 1st and 2nd. An interesting program has been arranged with several speakers who will discuss live topics at present of vital concern to the trade.

BUREAU OF FOREIGN AND DOMESTIC COMMERCE TO EXHIBIT SAMPLES OF FOREIGN HARDWARE.

Norman L. Anderson, Commercial Agent in Charge of the Chicago office of the Bureau of Foreign and Domestic Commerce has sent out a notice to the effect that the Exhibit Room of the New York Office is preparing to send on the road in the very near future the following collections of hardware samples which have been submitted by American consuls and commercial agents in all parts of the world:

Builders' hardware: locks, bolts, hinges, window catches, etc.; cabinet hardware: chest locks, drawer locks, furniture pulls, etc.; trunk hardware: padlocks.

The expense of shipping these samples is so great that it is planned to send them only to industrial centers where they will be of real practical interest to manufacturers. In order that no manufacturer who really has occasion to examine these samples be overlooked, it is requested that concerns interested advise the Chicago Office as soon as possible as to whether or not they wish to have an opportunity of seeing them there.

TEXAS HARDWARE JOBBERS ELECT OFFICERS FOR YEAR.

At the 22nd annual convention of the Texas Hardware Jobbers' Association, held recently in Houston, Texas, the following officers were elected for the ensuing year:

President: F. A. Heitmann, F. W. Heitmann Company, Houston; First Vice-President: G. K. McLendon, McLendon Hardware Company, Waco; Second Vice-President: W. H. Richardson, Jr., W. H. Richardson & Company, Austin.

Executive Committee:—Charles E. Nash, Chairman, Nash Hardware Company, Fort Worth; A. C. Goeth, Walter Tips Company, Austin; E. A. Peden, Peden Iron & Steel Company, Houston, and W. H. Torian, McLendon Hardware Company, Waco.

Secretary and treasurer, R. F. Bell, F. W. Heitmann Company, Houston.

MAY PARTY TO BE HELD MAY 25 BY THE CHICAGO RETAIL HARDWARE ASSOCIATION.

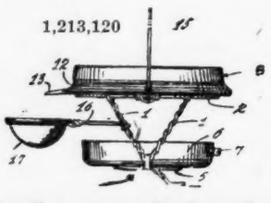
Elaborate plans are being made for the May Party which is to be given on Friday evening, May 25th, in the Drill Hall, of Masonic Temple, State and Randolph Streets, by the Chicago Retail Hardware Association.

The tickets for the event have been selling well and the various committees under the leadership of G. G. Englehardt are putting forward every effort to make the affair one of the most noteworthy that has ever been held under the auspices of the local association.

Tickets for the Party can be obtained from members of the Association at a cost of one dollar which admits a gentleman and his ladies.

EGG SEPARATOR PATENTED.

Flora L. Marcille, Thorold, Ontario, Canada, has obtained United States patent rights, under number 1,213,120, for an egg separator described in the following:



In an egg separator, the combination with a frame, of a white container and a yolk container removably mounted thereon, a strainer having a wire bottom removably mounted on the said frame above the white container, the said strainer having a hole in the wall thereof and a spout extending outwardly beneath said hole above said yolk container.

Women Properly Catered To Profitable Customers for Retail Hardware Stores

By WILLIAM T. GORMLEY, Chicago, Illinois

There was a time when the average hardware store did not give any evidence of being particularly interested in catering to women. In fact, neither the appearance of many stores nor the men employed were conducive to building up of any considerable business with women. To be sure, there were always kept in stock certain household articles which were used by women, but the stock of these was usually located somewhere in the rear of the store, was not attractively displayed, and very often the men employed in the store were not of the kind that "nice women" liked to have wait on them: They were dressed in overalls and did not present a very clean appearance.

William T. Gormley.

While, of course, a considerable improvement has taken place in most hardware stores so far as stock arrangement is concerned, and while also the owners of these stores seem to have come to a realization of the fact that women do not like to be waited upon by men of uncouth appearance, there is still considerable room for improvement in this regard in many hardware stores.

It is an interesting fact, however, that both in large cities and in towns of rural communities, the most successful retail hardware stores—at any rate, the largest proportion of them—are those where a definite effort is made to cater to trade of women.

This is only a natural outcome of the development in buying. In former generations, the man was the master of the household and held the purse strings. He bought practically everything that was used by the members of his family.

Today, those who are in position to know say that more than 60 percent of all the merchandise used in American homes is bought by the feminine members of the family.

Keeping this fact in mind, then, does it not seem reasonable to devote special attention to such a large number of buyers in order to attract their business to the hardware store?

It is well to remember, however, that the same sort of appeal or the same reasoning on the part of the customer that applies to men, does not usually apply to women.

For instance, if a man wants a tool of a certain kind, the thing in which he is the most interested, is whether it will do what he wants, and in most cases he is not overly concerned as to the matter of price.

With women, it is different. The average housewife—of the right kind—is economically inclined and the price is a very important matter to her. To be sure, she wants to make certain that the article which is offered her is of good quality and will render satisfactory service, but the price after all, is the question to which she pays particular attention.

This does not mean, however, that the only way to secure the trade of women is by cutting prices. It does mean that in advertisements directed particularly to women, the price feature should be emphasized somewhat stronger than is the case with advertisements directed to men.

As a matter of fact, one of the great weaknesses of hardware advertising—as done by the average retail hardware store—is the fact that the price feature is not given enough attention.

It is also well to keep in mind that even though women may be attracted to a hardware store by the advertisements of a low priced article, they may not always buy that article, for in many cases, if the dealer knows his business, he can and does induce the visitor to purchase some kindred item which will not only give her better service and satisfaction but will also yield him a better profit.

For instance, a certain hardware dealer in one of the outlying trade centers of Chicago, sent out a handbill on which a chopping knife was featured at 19 cents. He had plenty of these knives in stock and had them displayed, so that customers could see them easily when they entered the store, but near his display was another one—of food choppers—and each salesman was instructed to call every customer's attention to these food choppers which, however, were not advertised in the handbill. I have it on this dealer's authority, that during the time when the chopping knives were offered at 19 cents and the food choppers at prices from $1.50 to $2.50, he sold more of the latter than of the knives—which simply goes to prove the statement I made in the foregoing, that customers will be brought to the store by attractive offers of merchandise quoted at specific prices and also that they will buy other items not advertised when they are in the store.

Wm. T. Gormley

Chicago, May 14, 1917.

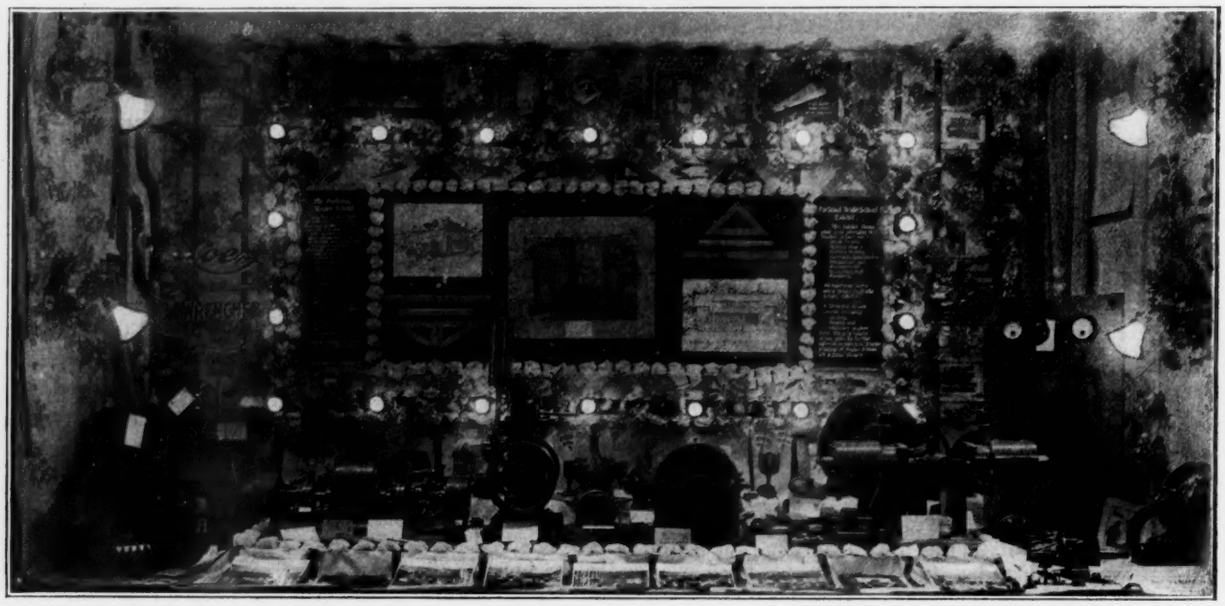
PRICES WITHDRAWN ON SCREENS.

The Continental Company of Detroit, Michigan, has withdrawn all quotations on screen doors and window screens and new prices which are a 10 percent advance over the prices of December last, have been established, but owing to the scarcity of wire cloth, the Company will only accept orders subject to its ability to fill them.

EXHIBITS IN AMERICAN ARTISAN WINDOW DISPLAY CONTEST

EXCEPTIONALLY HANDSOME WINDOW DISPLAY OF MANUAL TRAINING WORK AND TOOLS FOR SAME.

John Hardy of the Honeyman Hardware Company, who won first honors in AMERICAN ARTISAN AND HARDWARE RECORD Window Display Competition, entered several other arrangements which show evidence of the same thoroughness and the same beauty that characterized the prize winner. One of these exceptionally-handsome window displays is shown in the accompanying illustration, and proved doubly interesting because of the fact that practically all of the window space was devoted to an exhibition of manual training work done by boys in trade schools, while only a few items from the store's stock were featured. It received Honorable Mention in AMERICAN ARTISAN AND HARDWARE RECORD Window Display Competition.



Window Display of Manual Training Work Awarded Honorable Mention in AMERICAN ARTISAN AND HARDWARE RECORD Window Display Competition. Arranged by John Hardy for the Honeyman Hardware Company, Portland, Oregon.

The window display is described in the following by Mr. Hardy:

"Here is a window display unusual to the hardware store, consisting as it did of engines, and plumbing, electrical and pattern work produced by boys in the trade schools.

"In the background are shown specimens of architectural drawing.

"Wood turning is also featured in the display.

"The advertising value of this window display was exceptionally strong, showing as it did the skill of the trade school scholars to a marked degree, and the exhibit was inspected by hundreds of people who marveled at the work.

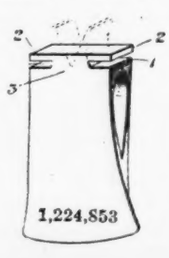
"The display was educational to the tax payers, many of whom had but a small conception of what was being done under trade school methods. Note that all we advertised in the display was a few drafting tools, and carpenters' tools, through a few nice advertising cards.

"The drapery of this display is of white bunting except the center of the background which was of black felt."

Mr. Hardy might have added, with all due modesty, that the particular attention paid to every detail and the remarkable beauty of the entire window display produced one of the best arrangements ever entered in AMERICAN ARTISAN AND HARDWARE RECORD Window Display Competitions—furthermore the appearance is so striking and indicates such painstaking preparation that it may truly be called a high water mark in modern window trimming.

PATENTS PROCESS OF MANUFACTURING AN AX.

George Wilford Campbell, St. John, New Brunswick, Canada, has obtained United States patent rights, under number 1,224,853, for the process of manufacturing an ax, described herewith:



The process of manufacturing an ax, consisting of slitting an ax blank from each side of its head end adjacent to the head thereof to provide oppositely disposed lugs, working outwardly said lugs to provide a recess therebetween, and then inserting a cast steel poll between the lugs and working the lugs around the poll to secure the poll to the lugs.

THE "PEP" OF IT.

"Full of Pep" is what the Burgess Battery Company, Chicago, say of their Number 6 and Flashlight Batteries.

If their Number 6 is full of "Pep," their "Twin-Six" which has twice the capacity, or will give twice the light, must have more "Pep." Then there is their "Super-Six" which has an average life in service of 152 hours.

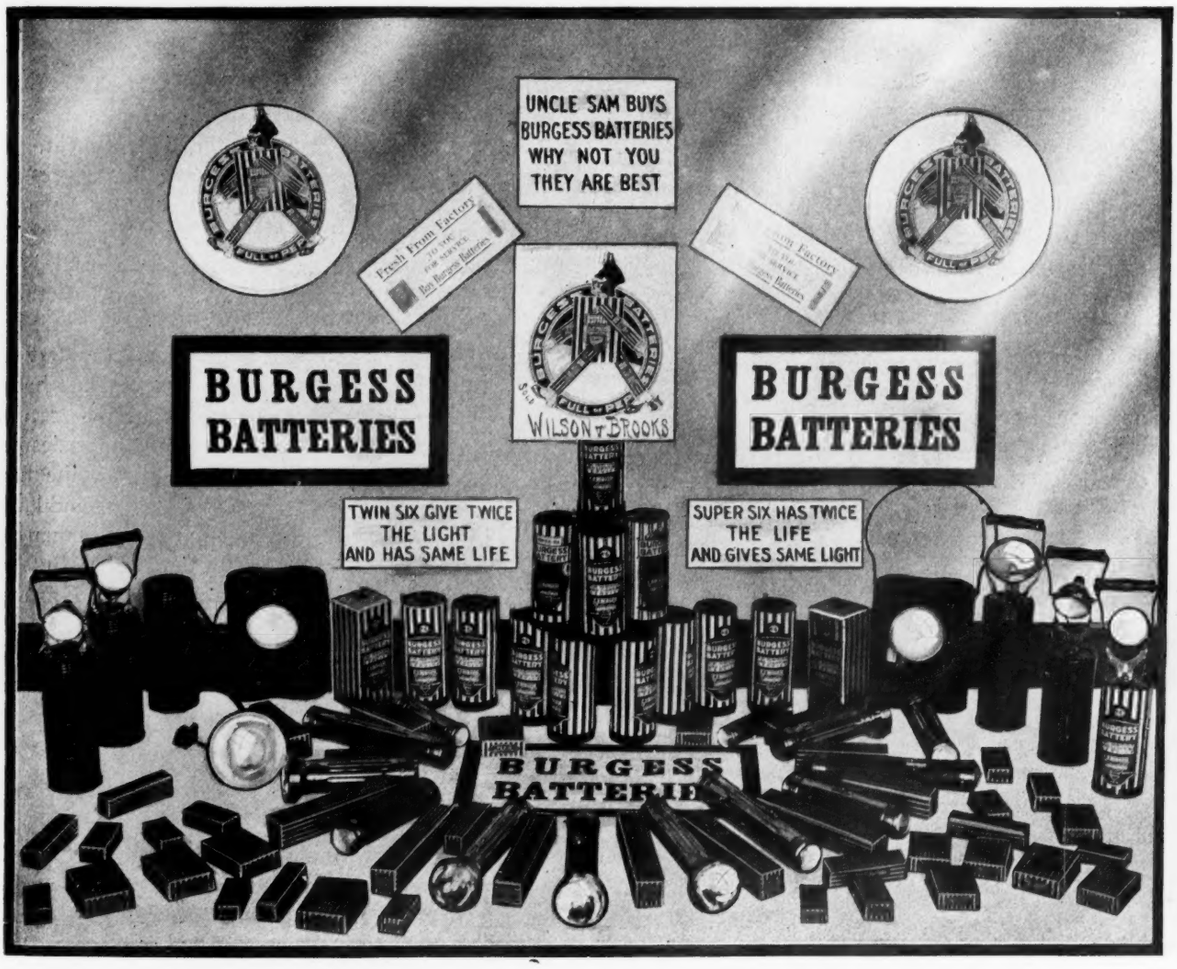
Because they're "Full of Pep," The Burgess Battery Company have had a very rapid growth. Their first plant had only 5,000 square feet. Some time since they added plant Number 2, which gave them 5,000 additional square feet. The expansion of their business has made more space necessary and they will soon occupy plant Number 3. This is a two-story building, with a high ceiling basement, 100-foot front and 150-foot depth. This will give them over 40,000 square feet. This capacity in connection with their complete organization and close connection with the Burgess Minerals Company, which owns mining property, producing an exceptionally high grade of manganese, enables them to give excellent service to their rapidly enlarging trade.

Probably the main reason for this phenomenal growth is their determination to produce only the best possible products. Their attitude towards the trade is also somewhat exceptional. They express themselves as not being desirous of selling all the trade, but they do want their dealers to sell all the batteries sold in their respective localities.

With that end in view they assist each dealer who features their goods by supplying the "Makings" of a window display, which will (1) bring the dealer's name out most prominently, (2) command attention, and (3) talk for the dealer.

We show a window display of Wilson & Brooks that illustrates their system. Concealed in the carton which stands at the apex of the pyramid is an electric light wire which may be attached to the local current, also a socket, a Wink-a-Light and a colored bulb.

When everything is set in position, there are intermittent flashes of red light immediately behind the body of the man who is full of "Pep." Even in day time the repeated red flashes arrest the attention of passers-by, who cannot help but note the name of dealer and the goods sold.



Installation of Burgess Battery Window Display in Wilson & Brooks Store.

The Burgess Battery Company have recently added some "peppy" signs that will go out to the trade for use in making window displays "talk."

They also have aids for their dealers in newspaper advertising. They believe in reciprocity, and state that they make it worth while for a dealer to boost for them, by boosting sales and profits for the dealer.

Make it your habit not to be critical about small things.—Phillips Brooks.

Important Features of Modern Merchandising

By Theo. R. Aveler*

If it were not for discontent we would today be clothed in skins of animals and living in caves. Discontent keeps the millions of spindles turning and builds our homes.

When content enters a man's life, progress and enthusiasm go out.

Some men don't die soon enough.

When a man ceases to be a producer; when he becomes merely a food consumer, standing perhaps in the way of someone who would be a doer, the time for the funeral ceremony has arrived.

Merely because Father Time says that a man is sixty years, or three score years and ten, or a centenarian does not count.

One of the most worthwhile women I ever knew was in her eighties. You couldn't be in her presence without benefiting from her wholesome spirit.

Some men have lived too long when they reach forty. Others are a loss to the world if laid away at ninety. I always admire the discontented fellow but I tremble for him unless he tempers his ambition with good judgment.

It is cow nature to want to get into the other pasture and human nature to want some other job.

Hundreds of retail clerks have asked me, especially since I have joined the bald-headed class and look as if I should have influence, to get them jobs on the road. It seems so easy to walk into the store, write down the order, sit around the hotel until train time and ride to the next town where the same thing is repeated, that there are many candidates for the job.

The first year after he gets married, the traveling salesman does a lot of thinking about quitting the road. Yet a man's wife may be the deciding factor for keeping him on the road. Some wives can and do spend not only every cent that "hubby" earns now, but what he has earned in the past and laid up for some anticipated enterprise.

But when a man has the backing of the right kind of a wife and a few thousand dollars that he can lay his hands on, he is looking around for opportunities.

A man can't be an aggressive salesman unless he is an egotist. Being an egotist he naturally thinks he can do great things.

Regardless of his age the time for a man to die is when he feels that he has no future, that his only golden age is behind him.

Happy is the man, whether he carries the grip or grips the plow handle who enters the morning of each day with expectations of great things.

The American's great weakness is superficiality in studying conditions and tendency to jump at conclusions. There is some compensation in this, because we do not say that because a thing never has been a success it is doomed to failure.

But for all that, folly in others can never be made wisdom in us.

I have always noticed that after a man had been in business for himself he made a better employe.

The most rampant critic of the management, because it was conservative in credits and aggressive in collections, appreciates the merit of this when he has been behind the scenes.

One way to change a critic into a supporter is to have him in the office for a while. There is nothing easier than to pick fault with what is being done, but doing it yourself or getting it done is another question.

When the link between the salesman and the house is only Uncle Sam's stamps and service, the salesman sees many things in the management that should be changed and it is human nature to give vent. But put this same chap up against the job itself and he undergoes a change. He learns by experience the resistance, the unexpected emergency, the checks, the limitations. He learns by experience that many things which seemed plausible and even essential in theory do not work out in practice.

WHEN HE IS WINNING HE MUST BE BIG ENOUGH TO AVOID ELATION, AND WHEN THE GAME GOES AGAINST HIM, STRONG ENOUGH TO NEVER CONCEDE DEFEAT.

The Critic Is Necessary for Progress but Does Not Produce It.

There are some men who are not solidified by responsibility because they have no instinct of the builder. Because this sort are few, most traveling men when given an opportunity to build for themselves feel the responsibility of the job and settle into the harness like seasoned plow horses.

With some it takes so long a time to find themselves, to get down to brass tacks, that the mortality is like that of infants—great during the baby period—but if they can live through the initial period they are sure to grow.

Every man must avoid repression and should cultivate expansion through right channels. Otherwise, he is like the stream whose bed is blocked and waters overflow the low lands, bringing destruction where there should be construction.

Where I meet a traveler who thinks he is superior to his job, I try to give him the thought of the wisdom of bringing his job up to his ideals instead of lowering his ideas.

*We would appreciate such of our readers as are in business for themselves, giving their opinions as to the desirability of operating a one man business, or forming a partnership or corporation.—EDITOR.

It may be one month, one year, one decade, but the time will come when a man's merit will be recognized by some one, if he has merit.

You are indebted to each experience you have for what you are.

Court such experiences as will enable you to grow. Growth enables you to be a bigger cog when you are fitted into the house organization and your name is on the brass desk plate.

Truth is truth regardless of what you want to think or do think.

When the people thought the world was flat it was just as round as it is today when we know it is round.

It is up to you to know the truth about every branch of your business and those which are not profitable. If they cannot be made to bear fruit, "lop" them off.

It is a mistake to permit sentiment to rule. Don't forget that some day, somehow, some way, you have to pay and pay with interest for every mistake you make.

I have said before that every successful traveling salesman has to be an egotist and self opinionated.

Probably that is why such a goodly percentage of traveling men that go into business, without an organization, fail.

A tenor makes as poor a bass singer, as a succesful salesman does a buyer or credit man or stock man or collector. He is not built that way, yet his "ego" tells him he can do it.

BEFORE THE DISCUSSION OF THE "RETAILER," SOME TIMELY OBSERVATIONS WILL BE MADE APROPOS OF THE CONDITIONS BROUGHT ABOUT BY THE GREAT WORLD WAR.

The traveling salesman must be an optimist as to the future and a liberalist as to quantities.

A buyer must be a pessimist and a conservative. It is difficult for people outside of fiction to undergo changes as did Dr. Jckyll and Mr. Hyde. The traveling man who would enter business must take this into account.

There are two ways open for the man who would get off the road—joining some organization where his peculiar capabilities will be of value, or building up an organization of his own.

The former may be likened, if you please, to adding the salt to the porridge to remove the flatness, whereas the latter is all too frequently the surrounding the salt with the porridge to give it body.

In a western city is a large mercantile establishment that for a number of years merely held its own. The stock and buying facilities entitled it to a trade that the concern seemed unable to secure. A "Knight of the Grip" who called on them several times a year for his factory recognized their possibilities and saw that their weak point was in the selling end.

His wife had complained greatly at his long and many trips, as the wives of traveling men have a way of doing.

Added to her plaint was the responsibility of a lad of eight in the family that needed the strength of a father's hand to hold him in check.

He had a few thousand dollars saved and was able to secure a goodly interest in the business by paying part cash. He was to have charge of sales. He put into his work so much pep and energy that the first year sales jumped almost 40 percent. There has been for each of the other two years over 25 percent advance, with only a trifling increase in overhead expense. He told me last fall that while he had not drawn nearly the salary he formerly had, yet he had lived comfortably and had cleaned up of his indebtedness each year more than his salary and in one more year he expected to own his one-third interest without any strings tied to it.

It very frequently happens that several salesmen having the right complements, one to the other, can join forces successfully. The reason there are so many failures from such combinations is because of the lack of consideration of the personal equation. This should have as much consideration from the standpoint of personal fitness and harmony as a man and woman should give before marrying. This, we all know, is very little.

It is not that less thought should be given to selecting wives but more thought to selecting partners because divorces and bankruptcies are disastrous.

One reason my wife and I get along nicely is because she never loses her temper, which I have the weakness of doing. For that same reason: if I ever have a partner I will have to reform, or he must be blessed with the ability of keeping silence under stress.

Some time since, the subject of partnership came up as several of us were making the circuit of the Black Hills, Portland, San Francisco, etc. In one of our discussions a shoe-drummer stated that a partner was either a producer, a paralyzer, or a "plethoric." When I asked him for a definition of a "paralyzer" he said that he was the sort that while he might be a well-intentioned body he had the unfortunate faculty of setting everyone on edge, of throwing sand in the gearbox as it were, of being in a business way what a germcarrier is in the matter of health, pleasant only when he had his own way, surly when crossed, inflated when he made a good move, and caustic if any one else blundered.

My idea of hell would be to have to rub shoulders six days in the week with that sort of a fellow.

The alliteration habit being started, the jewelry salesman spoke up saying, that he would divide partners as he had observed them into four classes: hoggish, harmonious, hurtful and helpful. This was supplemented by the shoe-man saying partners were either leaners or lifters.

There is a big difference in associates. I have always been interested in studying conditions in many firms and corporations where several are in equal authority and are supposed to carry equal responsibility. Some partners are fair-weather fellows. As long as everything runs smoothly and finances are easy, they pull along harmoniously; but when the

way is rocky and the bumps are jarring I so often find that one lays down.

There are some men who are real Gibraltars of strength when the time of trial comes.

There is a small jobbing house in a western town that I enjoy visiting because of the harmonious atmosphere which pervades the office. I know that there is often very radical differences of opinion on questions of policy, etc. But an understanding is always reached, and when a policy is fixed each one gives his 100 percent. At one time they were almost bankrupt because of an enormous loss from the failure of a very large corporation. It was really worth the experience to see the way those two fellows pulled together. The buyer in speaking of it said "Joe reminds me of my watch which has an illuminated face, and shines best on the darkest night. The more trying the times the more loyal and helpful he is."

Knowing "Joe" I knew that with a chap like him a trouble shared was a trouble quartered.

Let no man go into business for himself unless he is willing to carry not only his own burdens but also the responsibility of others.

He must be willing to be misunderstood without complaint and criticised without rancor.

When he is winning he must be big enough to avoid elation, and when the game goes against him, strong enough to never concede defeat.

One of the most pathetic failures I know of was that of an old established house in the central part of the United States whose manager gave up in a moment of depression. If a Joffre or a Haig had been at the helm it would have weathered the storm on the value of its equity alone.

The average traveling man is not seasoned to financial difficulties. To such as have gone into business for themselves and feel the pinch of financial stress I say "Sit tight." Your banker and your creditors are as anxious to see you through as you are to pull through. You alone can spell your defeat.

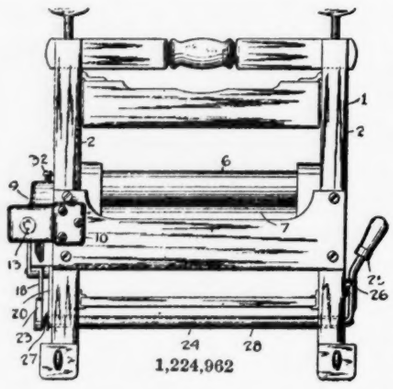
STIMULATE YOUR WAFFLE IRON SALES.

It is logical to presume that the demand of the public for well-made waffles will beget a demand for waffle irons that are capable of turning out just such delectable specimens of the baking art. In the improved Stover Waffle Iron, pictured herewith, the great fault of uneven thickness of the various parts of the waffle is said to be remedied, thus making possible quick, even baking with entire satisfaction to all concerned. The uniform thickness is made possible by forming one plate with square teeth and the other with square pockets, the teeth standing opposite the pockets as shown in the cross-section part of the illustration. Aluminum or iron plates are furnished, equipped with wooden handles, and joined by a ball and socket joint. Circular 1653 which gives detailed description of waffle irons, wafer irons and meat broilers, together with information about other Stover products, can be obtained by adressing the Stover Manufacturing and Engine Company, 719 East Street, Freeport, Illinois.

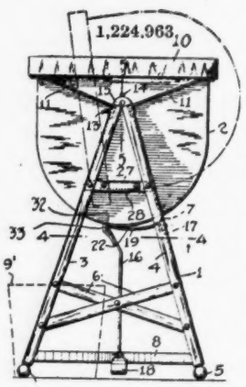
Stover Waffle Iron.

PATENTS DRIVING MECHANISMS FOR WRINGERS AND LAUNDRY APPARATUS.

Frederick W. Sauer, Brooklyn, New York, assignor to the Home Devices Corporation, Brooklyn, New York, has obtained United States patent rights, under numbers 1,224,962 and 1,224,963, for Driving Mechanisms for Wringers and Laundry Apparatus, respectively, described in the following:


1,224,962

Number 1,224,962: In driving mechanism for wringers, the combination of a vertically slotted frame, a driven member journaled in bearings in the slots of said frame, a box fixed on one end of the frame opposite the end of the driven member, gearing in the box for driving the driven member in either direction, a plate on the adjacent end of the driven member, said plate being held against rotation, and an abutment screw extending downward through an over-hanging portion of said box to bear against said plate.


1,224,963

Number 1,224,963: In a wash tub, a stand, a tub tiltably supported therein and having an outwardly projecting continuous top rim, said rim having an inclined notch formed in its inner side within the lines of the rim so as to constitute a non-projecting pouring lip, and a spout top comprising a flange projecting inward from said rim over the interior of the tub and extending at either side of said notch to opposite side portions of the tub.

SCREW PRODUCTS OF HIGH QUALITY SUPPLIED ON SHORT NOTICE.

When time is an important factor, it is well to remember that screw products can be shipped promptly on short notice. The thoroughness of the organization of the Corbin Screw Corporation, together with the size and facilities of their plant, is said to assure quick deliveries of SAE Standard Cap Screws, SAE Semi-Finished Nuts, SAE Castellated Nuts, as well as other Corbin Automatic Screw Machine products. The Corbin Screw Corporation also manufactures Cap and Set Screws, US threads, Machine Screw Standard ASME, Machine Screw Nuts, Wood Screws, Stove Bolts, Tire Bolts, Thumb Screws, Thumb Nuts, etc., and will be glad to submit quotations and advice regarding delivery upon receipt of blue prints and specifications. Full details of any of these products, together with information about the Corbin-Brown Speedometers and the Corbin Duplex Coaster Brakes for bicycles, which are also made by the Company, can be obtained by addressing the Corbin Screw Corporation, New Britain, Connecticut.

EMPLOYES OF AMES SHOVEL AND TOOL WORKS TO COOPERATE IN GARDEN CAMPAIGN

To sidestep the constantly-increasing cost of foodstuffs, the employes of the Ames Shovel and Tool Works, Anderson, Indiana, are making plans to cooperative in an extensive gardening and canning campaign. The movement is wide enough in its scope to include all the employes who wish to join, and those who have not gardens of their own at their homes will put in their share of time at the Company garden, which occupies more than five acres.

A census has been taken to learn just what vegetables each employe plans to raise and how large a crop he is planting. Throughout the summer and fall, three days a week will be known as Market Days, at which time it will be possible for the amateur gardeners to exchange the products of their "young farms." Thus if a man has more corn than he needs, he can take his surplus to the market and trade it for whatever foodstuffs he lacks. A refrigerator will be installed at the market place of ample size to keep many bushels of vegetables fresh and cool. The Company is giving assurance to the men that if time enough for garden cultivation is not available after working hours, there will be given so much time off to devote to this purpose.

It is planned that the garden campaign will supply foodstuffs for next winter as well as during the summer, and to this end a community canning plant will be put into operation this fall. Already twenty gross of cans have been purchased and other details are fast being worked out.

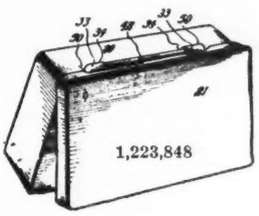
Arthur C. Birge, Superintendent of the plant and sponsor of the movement, has received the commendation of Governor Goodrich and members of the State Commission for his plans on cooperative gardening, and on a recent business trip to St. Louis and Chicago, he outlined the campaign to several prominent manufacturers in these two cities, with the result that they are planning to institute similar movements in their factories.

PRIZES FOR BEST ADVERTISEMENT OF BURGESS BATTERIES.

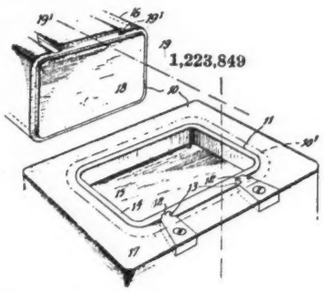
The Burgess Battery Company, Chicago, are announcing to the trade that they will award a prize of $25.00 for the best advertisement of Burgess Batteries submitted by July 1, 1917. In preparing this advertisement, dealers are urged to take into consideration the fact that a Burgess Flashlight will find the article sought in any nook or corner, and one Burgess Battery has more service than 2,000 matches. Furthermore, it is said, the battery eliminates all fire hazards: It never sets clothing in the closet on fire, nor hay nor straw in the barn, nor rubbish in the basement or shed; it is as safe for a child as for a man and is always a clean, reliable, portable, electric-light plant. The dealer can also emphasize the facts that he has a stock fresh from the factory, and the batteries give long service at low cost. Any or all of these points can be embodied in an advertisement which will produce results and will stand a good chance of winning the prize. When this contest is concluded on July 1st, the Company will hold another competition in which $100.00 will be paid for the best advertisement of additions to their line. Full particulars of the Burgess Batteries and the contests can be obtained by addressing the Burgess Battery Company, 62 East Lake Street, Chicago.

PATENTS LID HINGES AND LIDS FOR SHEET METAL RECEPTACLES.

George William Berry, Rose Bay, near Sydney, New South Wales, Australia, assignor to The Wireless Hinge Manufacturing Company Limited, Sydney, Australia, has obtained United States patent rights, under numbers 1,223,848 and 1,223,849, for lid hinges for sheet metal receptacles and lids for pressed sheet metal receptacles, described in the following:



Number 1,223,848: A process for hingedly connecting a sheet metal receptacle body and rimmed lid, which consists in producing bulbed tongues on said body portion, bending a depending marginal portion of the lid rim stock to a tubulous or fluted section, slotting out rim stock rearward of the tubularly bent margin thereof thereby leaving portions of said tubulous or fluted margin to form pintles, positioning said pintles under said tongues, and inclosing said tongues thereover.



Number 1,223,849: An apparatus for forming a rimmed lid with a depending portion on one rim and from the margin of which hinge pintles are formed comprising a forming punch and a die-block, a deep groove formed vertically in said die-block, notch cutters projecting inwardly from one side of said groove, recesses in the inner sides of said cutters, a drawing ring having its outer periphery shaped to fit snugly in said groove and around said cutters, a forming block located within said drawing ring and below the level of said cutters, said punch having its periphery shaped to fit neatly in said groove, and an ejector block fitting slidably within the lower part of said punch.

HARDWARE DEALERS CAN AND SHOULD HELP TO INCREASE SUPPLY OF VEGETABLES.

The past few months have proven the necessity of more attention being given to the raising of vegetables and of conserving them for next winter's supply. Especially with regard to the latter is there need for more care, as immense quantities of vegetables are spoiled because of neglect or ignorance in the matter of drying, cooking or other forms of conserving. It is of interest, therefore, to note that the American Steel and Wire Company has published a "Bulletin on Preparedness for Winter's Food Supply," prepared by Dr. Ernest W. D. Laufer, the well known agronomist, in which much valuable information is given on the subjects referred to. Copies of this Bulletin may be obtained from the American Steel and Wire Company, 208 South LaSalle Street, Chicago, and hardware dealers will render a valuable service to their communities by having these Bulletins published in their local newspapers.

"DEACON" SALISBURY PREVENTS PASSAGE OF ANTI-REVOLVER LAW IN MISSOURI.

American Artisan and Hardware Record has for some time been directing the attention of hardware dealers throughout the country to the bills which have been introduced in various state legislatures to prohibit the sales of firearms. Time and again the necessity for preventing and repealing such unfair legislation has been forcibly emphasized to everyone in the trade—the theme is not a new one—but as a rule the dealers and their Associations have been apathetic and disinclined to act for the betterment of their own interests.

In fact, wherever such attempts to pass laws restricting the sale of firearms have proven unsuccessful, the credit is due generally to manufacturers, and in this field the Iver Johnson's Arms and Cycle Works have for years been doing laudable work, engaging men throughout the country to make every possible effort to curb this iniquitous legislation wherever it is proposed.

Among the pioneers in the employ of the Company is G. F., better known as "Deacon" Salisbury who for years has been devoting his time to this purpose. A striking instance of his efforts to combat unfair firearms laws was noted recently when Mr. Salisbury proved instrumental in preventing the passage of an anti-revolver law by the State Legislature of Missouri.

It appears that some time ago, Senator Kinney of the State Legislature at the behest of Chief of Police Allender of St. Louis, introduced a bill in the assembly purporting to regulate the sales of pistols, revolvers and similar weapons. Both the Chief of Police and the Senator might have known that similar ordinances enacted in other states had proven utter failures so far as restricting the sale of firearms was concerned and that in no way did these laws prevent the criminal from securing weapons, but they saw fit to use every means within their power to pass the law. They visited the members of the State Legislature personally, kept after them day by day and employed such far-fetched arguments as the fact that the London police did not carry revolvers nor clubs, hence there was no necessity for the people having any.

But these dubious, far-fetched reasons were accepted and the bill passed the Senate. Then someone suggested to the advocates of the firearms law that the introduction of a similar bill in the House would expedite its passage, with the result that this was immediately done and the bill was "railroaded" through both houses of the Legislature.

It was now up to the Governor to act on the proposed law. Up to this time the hardware jobbers and dealers of the state had refused to make any effort to stop the enactment of the anti-revolver law, despite the fact that "Deacon" Salisbury had been urging them continually to act for their own good before it was too late. At last, with but one week remaining for the Governor to consider the bill, he managed to rouse them to action by the declaration that Governor Gardner, being a business man would listen to business arguments on this piece of legislation if they were put to him in the right manner by the leading merchants of Missouri. Accordingly, the jobbers of St. Louis and the officers of the Retail Hardware Association of Missouri, spurred on by the unceasing, active work of the "Deacon," got together, conferred with the Governor, and by means of their clear, convincing arguments, induced him to veto the bill.

They pointed out to him that had this bill become a law, it would have had no effect in preventing crooks and hold-up men from securing revolvers from other states, and at the same time would work a serious hardship on the hardware merchants of the state. Certainly few, if any reputable citizens would care to go to the trouble of going to a Clerk of the Court, paying a fee of 50 cents and going through all the "red-tape" called for by this bill, to procure a weapon which they might have occasion to use in the protection of their homes, when it would be such a simple matter to send outside of the State of Missouri and get it from a mail order house. A resident of St. Louis could walk across to East St. Louis, Illinois, or a resident of Kansas City could go to Kansas City, Kansas, and procure a revolver without any restrictions whatever. It was made plain to the Governor that the bill, on the face of it, was ridiculous from a merchant's standpoint, and that certainly no man with evil intent would register his purchase of a revolver with a Clerk of the Court when he could secure it so easily from outside of the state.

The hardware merchants of Missouri were indeed fortunate to be able to kill this bill at such a late period, through the efforts of Iver Johnson's Arms & Cycle Works, after it had passed both houses of the Legislature. The proper and most effective time to act is at the hearing ,and at the hearing of Senator Kinney's bill, Mr. Salisbury was the only one present who voiced his opposition to its enactment. Hardware dealers should always hold themselves in readiness to act at the right time in curbing this obnoxious, anti-revolver legislation, because it proves a severe handicap to every law-abiding citizen and in no way accomplishes the purpose for which it is intended.

COMING CONVENTIONS.

Master Sheet Metal Contractors' Association of Illinois, Chicago, May 22. David M. Haines, 1929 West Lake Street, Chicago, Secretary.

Alabama Retail Hardware Association Convention and Exhibition, Montgomery, May 22, 23 and 24. Walter Harlan, Secretary, 44 Boulevard Circle, Atlanta, Georgia.

Metal Branch of the National Hardware Association, June 1st, William Penn Hotel, Pittsburgh. George A. Fernley, Philadelphia, Secretary.

Georgia Retail Hardware Association, Macon, June 5, 6 and 7. Walter Harlan, Secretary, 44 Boulevard Circle, Atlanta, Georgia.

National Retail Hardware Dealers' Association, St. Louis, June 12, 13 and 14. M. L. Corey, Argos, Indiana, Secretary.

National Association of Sheet Metal Contractors, Cleveland, Ohio, June 12, 13, 14 and 15. Edwin L. Seabrook, Philadelphia, Secretary.

National Warm Air Heating and Ventilating Association, Cleveland, Ohio, June 13. A. W. Williams, Columbus, Ohio, Secretary.

Ohio Sheet Metal Contractors' Association, Cleveland, June 14. W. D. Weaver, Columbus, Secretary.

Carolinas Retail Hardware Association, Wrightsville Beach, North Carolina, June 19, 20 and 21. T. W. Dixon, Secretary, Charlotte, North Carolina.

American Washing Machine Manufacturers' Association June 21, 22 and 23. At Lake Harbor, Michigan. Raymond Marsh, Otis Building, Chicago, Secretary.

MORE POTATOES IMPERATIVE, SAYS AMERICAN STEEL AND WIRE COMPANY.

According to the report of crop conditions issued by tht American Steel and Wire Company from their Chicago office for the week ending May 12th, there is an imperative need for the growing of more potatoes. The government report on wheat, according to this Bulletin, shows that the crop has been cut down considerably and it is urged that more potatoes be planted so that they can be drie dand saved for future use.

This crop report has been compiled to the traveling salesmen of the American Steel and Wire Company and is an accurate forecast of what is to be planted in the United States, together with the weather and labor conditions.

All over the United States, according to the report, there is extreme scarcity of labor and the crops in nearly every section are, because of cold weather, very backward.

OBITUARY.

Captain Joseph L. Dickelman.

Captain Joseph L. Dickelman, prominent Ohio manufacturer of sheet metal products, business man and Civil war veteran, died recently at his home in Forest, Ohio, of Bright's disease.

Captain Dickelman was born in Metz, Germany, and was but three years old when his parents came to America. During the Civil War he served for three years in the Ohio Volunteers.

At the time of his death he was engaged extensively in the sheet metal trade and the manufacture of sheet metal products.

Mr. Dickelman was a man of unusual business ability and possessed to a marked degree those qualities which inspire respect and confidence and which strengthen the bonds of friendship and love among men. He had been in the sheet steel business for over thirty years.

E. T. Fraim.

E. T. Fraim, President of the Keystone Lock Works, died recently at his home in Lancaster, Pennsylvania, after a prolonged illness of several years. He was born in Lancaster February 18, 1857, and founded the Keystone Lock Works in 1879. Under his able management the business enjoyed a continuous growth from the beginning, and the factory now occupies 42,000 square feet of floor space, producing millions of locks annually. Mr. Fraim was a member of the Pennsylvania Society of New York, the Manufacturers' Club of Philadelphia, the Hamilton Club, the Elks and other organizations, in all of which he took an active part. A wide circle of business and social friends mourn his loss.

If you seek for good business ideas among casual acquaintances, you may be surprised to find out what good ideas people sometimes have about a business they never engaged in.

RETAIL HARDWARE DOINGS.

Indiana.

The Builders' Hardware Company, Gary, has been incorporated for $10,000 by P. E. Schubich, J. R. Cole and R. T. Winsor.

Iowa.

Van Gerpen Brothers, Aplington, have opened a hardware store.

Hanson and Lowe, Atlantic, have sold their hardware store to W. R. Johnson.

The hardware store of Koto and Perry, Forest City, was badly damaged by fire.

E. J. Sandvig, Roland, has bought a hardware store.

S. K. Lewis, Shenandoah, has purchased the E. C. Hutchinson hardware store at Thurman.

A. F. Hofer has taken over the F. D. Hoop hardware store at 727 Sycamore Street, Waterloo.

Michigan.

Albert Reinhardt and Sons, Midland, are erecting a modern business block which they will occupy with their stock of hardware and furniture.

The Delamater Hardware Company, Detroit, Michigan, is closing out its stock and will retire from the wholesale hardware business.

Minnesota.

The Barrett Hardware Company, Barrett, has been incorporated with a capital stock of $20,000 by H. B. Englund, R. H. Englund and Herman Carlson.

Johnson and Tengblad, Hallock, have dissolved partnership in the hardware business, A. W. Johnson continuing.

John Sullivan, Ivanhoe, will open a hardware store.

Henry Keso, Janesville, has sold his hardware store to E. J. Pream.

Bakken and Baklund, Litchfield, have engaged in the hardware business.

The Cuyna Range Hardware Company will open a store in Deerwood.

The hardware and implement warehouse of Martin Schnobrick, Seerles, suffered a fire loss.

J. W. Delaney, Avoca, has sold his hardware store to Vogel and Johnson of Fulda.

H. O. Wood has traded his stock of hardware at Lansing for land near Woodstock.

S. A. Nelson, Pemberton, has purchased the Henry Kese hardware stock at Alma City.

Eugene J. Keable, manager of the hardware department of the Companies store at Cloquet, has resigned and Oscar C. Johnson will succeed.

Montana.

I. L. Brooks has purchased the hardware business of H. M. Paulson at Plentywood.

J. C. Johnson, Toledo, will open a hardware store.

The Farmers Grain and Trading Company, Westby, has engaged in the hardware business.

Nebraska.

The Herrold Brothers Dry Goods and Hardware Company, Benedict, has dissolved partnership, N. H. Herrold continuing.

H. Reuting has purchased the hardware business of C. E. Bass and Company, Ogallala.

The Balfour hardware business, at Norfolk, was sold to John Friday.

C. M. Stephens has bought the interest of the stockholders in the Chappell Lumber and Hardware Company at Chappell.

The hardware firm of H. H. Mille and Company, Wynot, has dissolved.

W. M. Delaney, Ord, has sold his hardware store to Vogel and Johnson of Fulda.

North Dakota.

A. A. Lane, Sherwood, has purchased the Thoreson hardware store.

J. S. Nye, Ryder, has bought an interest in the Olness hardware store.

A. N. Eliason, Beach, will erect a two-story brick hardware store.

South Dakota.

H. W. Crawford, Iroquois, has sold his hardware store to George W. Clark.

Wisconsin.

The South Side Hardware and Plumbing Company, Sheboygan, has been incorporated with a capital of $25,000 by Martin Benhop, Edwin Aldag and William Gehrke.

Gray and Block Hardware Company, West Bend, will close out their business.

M. J. Turk, Soldiers Grove, will engage in the hardware and automobile business with his brother.

Herman Senger has sold his interest in the Kutzke-Senger Hardware store at Portage to R. O. Meyer. The new name will be the Kutzke-Meyer Hardware Company.

C. H. Harris, Pepin, is moving his hardware stock to Ceylon, Minnesota.

Andrew Vingie, Montford, has sold his share in the Montfort Hardware Company to Henry Chandler.

Galdabini and Rubatt, Hurley, hardware and furniture dealers, have sold their business.

AUTOMOBILE ACCESSORIES SOLD BY HARDWARE DEALERS

MEETING OF AUTOMOBILE ACCESSORY JOBBERS CALLED OFF.

The meeting of The National Association of Automobile Accessory Jobbers, which was to have been held soon at Hot Springs, Arkansas, has been declared off for the time being. This is due to the action of the membership who did not feel that this was the psychological time to hold the gathering and in no way affects the usefulness of the organization nor its work.

NORTHWESTERN CHEMICAL COMPANY INCREASES CAPITAL STOCK.

The Northwestern Chemical Company, Marietta, Ohio, manufacturers of the "Chemically Correct" line of automobile specialties, have increased their capital stock of $20,000, all common, to $150,000, which will consist of $100,000 common and $50,000 preferred stock. The increase was necessitated by the rapidly growing business, and new buildings will be erected and additional machinery purchased, so that the Company will not be dependent upon individual shipments of raw materials.

BIG PROFIT IN AUTOMOBILE ACCESSORIES.

If you have an automobile yourself, you know what it costs to keep that car in running trim. There are spark plugs to buy today—a new spot light perhaps tomorrow—tires and tubes ever so often—chains and mudhooks, lamps and dimmers—and so on down the list. Where do you buy these auto supplies? What do you pay for them? How much does the fellow who sells them to you make on the sale?

You would be astonished if you actually realized the big profit for the retailer of auto accessories and supplies. If you actually realized that over four million automobiles will be running this year and that every one of them will need these items, you would see at once that you ought to get busy and sell them.

MOTORCYCLES EMBODYING MANY NOTEWORTHY FEATURES.

To the layman or the novice, a motorcycle is a motorcycle. The expert, however, sees deeper: To him, a motorcycle is a delicate mechanism of hundreds of parts, any one of which may cause trouble. He studies the design and placement of those parts, the materials of which they are made, and the workmanship. He is interested in the size of the bearings, the strength of the cranks, the temper and accuracy of the gears, and the simplicity of adjustments. Consequently, it is said, he will appreciate the distinctive design of the Iver Johnson Motorcycles. The lines are racy and compact; the saddle is low, and the weight of the machine is correctly distributed, giving practically complete control and balance. Noteworthy features of these motorcycles are the long stroke type motor, the double crank, the multiple speed clutch, the mechanical oiling, the valve action, the spring fork and spring seat post, and the outside control. Full details are given in the catalog of motorcycles, which together with catalogs on firearms and bicycles, can be obtained by addressing Iver Johnson's Arms and Cycle Works, 354 River Street, Fitchburg, Massachusetts.

DISPLAYING AUTOMOBILE ACCESSORIES IN THE STORE.

In attracting and interesting people in your stock of automobile accessories, the window and interior displays of the store are of vital importance. A window display that is pleasing to the eye and conveniently arranged for inspection is certain to appeal to every user of automobile supplies and accessories who passes the store. Similarly, a counter or case display will provide the proper lead for inquiries and sales if it is made interesting and can be easily seen. In the selling of automobile items, as in many other lines, the prospect's glance at the article in question very often develops into the sale, and hence the display cases in the store should be built so that they can exhibit a large number of articles in an attractive manner. The material for such cases can be secured at a small expense and assembled complete in a few days' leisure time. A style which has proven very effective and convenient for display purposes is a regular rectangular-shaped show-case with glass top and front, and with removable drawers arranged in tiers. The rows of drawers rest on shelves, and the shelves fit in grooves in triangular-shaped uprights at the extreme sides of the case. Each drawer has a stop on the back to prevent it from being pushed too far forward, and on the front of them are neatly-prepared cards giving the name and price of the item in the respective drawer. Any number of these drawers or boxes can be installed and should, of course, be planned to display the merchandise.

PROGRESS IN ELECTRICAL BUSINESS.

Progress in our electrical business during thirty years (notwithstanding that less than thirty percent of the population is electrically served) has been one of the wonders of the world; its contribution to the comfort, happiness and efficiency of our modern life is so great that we wonder how a preceding generation did without it. We may justly feel proud of such a magnificent business which in every department of its development is so worthy of our best thought and efforts.—J. Robert Crouse.

ADVERTISING CRITICISM AND COMMENT

Helpful Hints for the Advertisement Writer

A few days ago, a large retail drug house in Chicago announced one of its usual sales in a rather unusual manner. The newspaper advertisement carrying the message to the public stated briefly that no sales talk or description of the items was given for the simple reason that the prices spoke for themselves. This advertisement undoubtedly achieved splendid results. Why? Because the public buy such articles often and hence are already apprised as to their merits, so that practically only the matter of price is of interest to the reader. This method of advertising may safely be applied to other lines with which people are well acquainted, but when the article advertised has no distinctive name, or is not widely known, or is not tied up directly with the price quotation, it will be found far more advisable to cite a few pertinent facts regarding its quality and usefulness. So, for example, in the seven inch, single column advertisement reproduced herewith, which the Bingham Hardware Company, Superior, Wisconsin, inserted in the Superior *Telegram*, the effectiveness would be improved by saying a few words about the coaster wagons, roller skates, etc., and then separating the different items by thin rules. The lower half of the advertisement evidently gave the compositor the opportunity of showing how many type faces he had at his disposal; and here also the layout could be improved by using a uniform style of heading or by placing the largest heading with its sub-heads at the top and then grading the others down. These points and similar ones may not appear to be of much importance, but taken collectively, they determine whether or not the advertisement will fully serve its purpose, and consequently they deserve close study.

* * *

The average house owner, having had several years' experience with shingle roofs, is certain to lend an attentive ear if the merits of a weatherproof roofing are emphasized to him in the proper manner. He will be especially interested to learn that such a roofing can be applied right over the old, leaky roof or directly to roof boards on new buildings—hence the advertisement shown herewith which was prepared by the manufacturers of the Art Craft Roof and was inserted by H. Danz, Jr., Green Bay, Wisconsin, in the *Green Bay Gazette*, no doubt proved quite effective. Inasmuch as advertisement is very attractively laid out, is easy to read, and lays stress on the points that are of vital concern to the houseowner, it served to arouse a marked interest in the Art Craft Roof, which was enhanced by the invitation to write for samples and secure estimates. Advertisements of this kind "fill the bill" for the simple reason that they provide every incentive for the reader to make a further investigation.

Art Craft Roof
A Perfect Roof at ½ the Cost of Shingles
This guaranteed weatherproof roof is applied right over the old, leaky, expensive, shingled roof, or direct to roof boards on new buildings. Better looking, longer wearing, fire resisting and far more economical than any other roof obtainable.
Cannot leak or come off. Wears like iron. Adds distinction and beauty to any building. Never has failed to give perfect, permanent satisfaction.
Comes in three beautiful patterns—Red, Green and Silver Gray.
Ask us for samples of the Art Craft, and get an estimate for your house. The Art Craft Roof will save you money
H. DANZ, JR.
Prepared Roofing and Sheet Metal Work.

* * *

A good window trim is sure to interest somebody.

HEATING AND VENTILATING

NATIONAL WARM AIR HEATING AND VENTILATING ASSOCIATION TO MEET IN CLEVELAND, JUNE 13.

An announcement has been sent out to all manufacturers of warm air heaters and accessories that the Annual Convention of the National Warm Air Heating and Ventilating Association will be held in the Statler Hotel, Cleveland, Ohio, on Wednesday, June 13th, the same week that the National Association of Sheet Metal Contractors hold their Annual Convention in the Hollenden Hotel, Cleveland. The first session will commence promptly at 10:00 A. M., and all present will be entertained by the Association at luncheon.

As matters of vital importance to the industry are to be considered, every manufacturer of warm air heaters and accessories is strongly urged to be present. Those who plan to attend should make hotel reservations in advance and should notify Secretary Allen W. Williams, Columbia Building, Columbus, Ohio.

HEATING AND VENTILATING ENGINEERS TO MEET IN CHICAGO.

The semi-annual meeting of the American Society of Heating and Ventilating Engineers will be held at the Hotel LaSalle in Chicago on Wednesday, Thursday and Friday, July 18 to 20. This will be the 44th regular meeting of the Society, and while the entire program has not yet been arranged, the Entertainment Committee of the Illinois Chapter and the Chicago Association of Commerce are making elaborate plans for the entertainment of the Society.

ILLINOIS HEATING AND VENTILATING ENGINEERS HOLD LAST MEETING OF SEASON.

The last meeting of the season of the Illinois Chapter of the American Society of Heating and Ventilating Engineers took place at the Hamilton Club, Chicago, on Thursday evening, May 17th, at 6:30 P. M. The event was an informal dinner at which an address was made by Dr. Preston Bradley. Music for the dancing was furnished by Henschell and a large crowd turned out.

PROFESSOR CARPENTER RETIRING FROM CORNELL.

Professor R. C. Carpenter who is a past president of the American Society of Heating and Ventilating Engineers will retire from active work at Cornell University at the end of the present school year. Professor Carpenter has served the University for nearly thirty years and the Committee on General Administration of the Board of Trustees have adopted the following resolution:

"Resolved, that the Trustees in accepting the resignation of Professor Carpenter express their high appreciation of his services to the University for nearly thirty years. As a pioneer in the field of experimental engineering he is held in the highest esteem by all mechanical engineers, and by his writings in this field, he has made an assured place for himself in the annals of his profession. As a teacher and investigator he is affectionately remembered by many generations of students and his retirement from the Faculty of Sibley College will be viewed with great regret by all his colleagues."

WARM AIR HEATER THAT EFFECTS SAVING IN FUEL.

With fuel, especially coal, playing such an important part in the expenses of the home, the dealer can render splendid service to his trade by the recommendation of a heater which is economical in coal consumption.

Such is the claim made for the Beaver Warm Air Heater by the Danville Stove and Manufacturing Company of Danville, Pennsylvania, who assert that this heater is one of the easiest operated and cheapest, quality considered, on the market today. Now is the time to talk heaters for installation during the summer months.

BENJAMIN FRANKLIN'S WORDS HOLD GOOD NOW.

When will princes learn arithmetic enough to calculate, if they want pieces of one another's territory, how much cheaper it would be to buy them than to make war for them, even though they were to give a hundred years' purchase? But if glory can not be valued, and therefore the wars for it can not be subject to arithmetical calculation, so as to show their advantage or disadvantage, at least wars for trade, which have gain for their object, may be proper subjects for such computation; and a trading nation, as well as a single trader, ought to calculate the probabilities of profit and loss before engaging in any considerable adventure. This, however, nations seldom do, and we have had frequent instances of their spending more money in wars for acquiring or securing branches of commerce than a hundred years' profit or the full enjoyment of them can compensate.—Benjamin Franklin.

Owing to the crowded condition of the United Engineering Society Building in New York during the first three weeks of the year, an expression of opinion is being sought from the members of the American Society of Heating and Ventilating Engineers, regarding the change of the date of the Annual Meeting from the third week in January to the fourth Tuesday of each year.

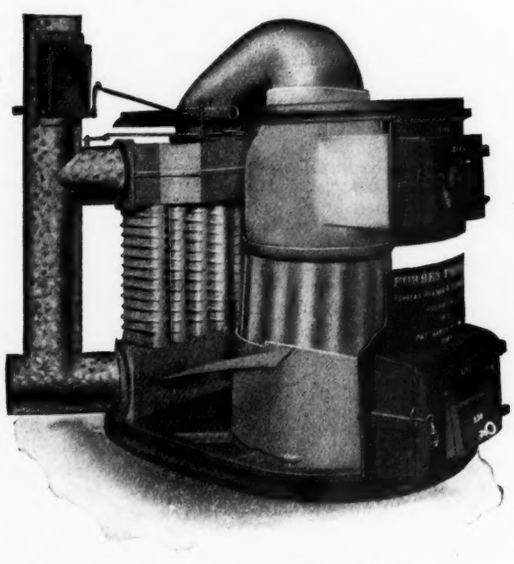
PRACTICAL FEATURES OF MERIT IN WARM AIR HEATERS APPEAL TO PROSPECTS.

The many practical features of merit embodied in the Lexington Warm Air Heater, the manufacturers state, make it an easy matter to convince the prospective purchaser of its value and utility. They say that aside from the special points of construction, every pound of iron used in the castings is the highest grade of pig iron, and not an ounce of scrap is used; hence the castings will not warp or burn out, thus eliminating the question of repairs. Other features of the Lexington warm air heater, which is illustrated herewith, are the double lap, claimed to insure air tight connections, the dome heavily ribbed on the outside to prevent warping, bulging or cracking under extreme heat, and the slotted firepot with the top air belt through which the air passes from the ashpit section, thus creating a hot blast which is said to consume practically all the smoke and gases. The new catalog of the Lexington Warm Air Heaters, which gives full details, will be sent upon request, by the Culter and Proctor Stove Company, Peoria, Illinois.

Lexington Warm Air Heater.

EFFECTIVE CIRCULATION OF FLUE GASES IN WARM AIR HEATER.

It is well known to manufacturers and installers of warm air heaters that the efficiency of the apparatus is dependent to a great extent upon the utilization of the heat units derived from the burning fuel. In the Forbes Warm Air Heater, shown in the accompanying illustration, the circulation of the flue gases is said to be such that a high degree of efficiency is realized. Fuel is fed into the deep fire pot which is corrugated, as shown, to allow for expansion. Combustion takes place within the firepot and dome, and the hot gases rise into the smoke neck and then go downward into the radiating manifold. Here they are distributed and pass downward through separate flues, losing most of their heat to the inrushing air. When starting a fresh fire, or when a quick response is desired, the direct draft, controlled by a revolving damper is used, allowing the gases to pass directly from the top of the manifold into the smoke stack. Full particulars of the construction of Forbes Warm Air Heaters can be obtained by addressing the Tubular Heating and Ventilating Company, 228 Quarry Street, Philadelphia.


Forbes Warm Air Heater With Casing Removed.

STEEL CASING RINGS MADE TO EXACT MEASUREMENTS.

The Walworth line of registers and other warm air heater specialties includes steel casing rings, one of which is pictured in the illustration herewith, made to individual measurements and requirements. According to the manufacturers, the equipment used in making these rings is modern and efficient, being supplemented by the experience acquired during many years of manufacturing. They are substantially constructed with lugs for double casings or without lugs for single casings, in full circles for ordinary use and partial circles for cast fronts. The rings are guaranteed to be made to exact measurement and in true circles. Other items listed in the catalog are baseboard and sidewall registers in scroll and plain lattice designs, double gratings for pipeless warm air heaters, cold air faces, borders, etc., also ash pit cleanout doors, slop sinks, sewer strainers, foundation and vent grates, porch supports, hitching weights, corner mangers, manhole covers and rings, flame spreaders, and mail boxes. Copies of the catalog, together with price list, will be sent upon request by the Walworth Run Foundry Company, West 27th Street, Cleveland, Ohio.

Walworth Casing Ring for Warm Air Heaters.

MAKING FARMER REAL BUSINESSMAN.

The railroads and the government are largely responsible for farm progress. They dig out facts in their laboratories and at their experiment stations, then send men into the country, not only to tell the farmer the facts, but to show him how to use them. But we shall make infinitely greater progress, both in the science of agriculture and in agricultural methods. Farming, I believe, is destined to evolve into a great business proposition, conducted by sharp businessmen. —Edison.

INSTALLATION, CARE AND OPERATION OF WARM AIR HEATERS.

In a recent issue of the official publication of Iowa State College of Agriculture and Mechanic Arts, there appeared a very comprehensive article by Professor K. G. Smith, pertaining to the installation, care and operation of warm air heaters, and we publish herewith the part which has reference to the size, construction and installation, the second part which gives instructions as to the operation and care of a warm air heater to be published in our next issue:

The Installation, Care and Operation of the House Furnace.

For at least six months in the year inhabitants of Iowa are vitally interested in the problem of house heating. Various means are employed for this purpose; the fireplace, the stove, the steam heating system, the hot water heating system, and the warm air furnace. The fireplace is not effective in severe weather, and the stove, for heating purposes, is gradually being displaced by the other systems. Each one of the three systems mentioned has its own field to which it is particularly adapted, and its advantages and advocates.

Steam and hot water systems usually have the advantage of being installed under the care and oversight of competent engineers and are carefully designed to meet requirements. The warm air furnace has suffered because of its elasticity. That is, a furnace which would easily heat a house in zero weather, under normal conditions of firing would heat the same house at 20° below if crowded. It is on account of this very elasticity that the warm air furnace of small heating capacity has been abused and often proven unsatisfactory through no fault of the system itself.

A good furnace of sufficient size, well installed and properly operated, is a heathful and efficient method of heating the average dwelling house. For large buildings, in which the rooms to be heated are far distant from the furnace, it is not adapted. This statement does not apply to mechanical hot blast systems.

It is not intended in this bulletin to discuss questions of design and the merits of various types of heating installations, but to confine what is said to the installation, operation and care of the warm air, house heating furnace. However, much of what is said in regard to chimneys, firing, and care applies to other systems just as well as to the warm air furnace.

Chimneys.

To get a good, satisfactory installation begin with the chimney. The chimney should be as straight as possible and free from bends or offsets. An attractive architectural design sometimes interferes with the chimney draft by decreasing the size of flue. The flue area should not be decreased for the sake of supposed architectural effect. Gases passing out of the chimney are retarded by rubbing against the walls. The less wall there is for a given area, the more efficient the chimney. Lining a chimney with good, smooth tile with well pointed joints reduces the friction and lessens the danger of fire, but, in so lining it, care must be taken not to reduce the flue area below what is necessary for good draft. For instance, if an 8x8 inch flue is desired, the inside measurements must be 8x8 inches. No flue should be less than 8x8 inches, better 8x12 inches. Floor beams should not stick into the chimney.

Aside from having a good flue the chimney should be high enough to be free from interference by currents of air deflected by the roofs of buildings or trees. Chimneys from forty to sixty feet high are the most satisfactory. Height is measured from the grate to the top of the chimney. A chimney depends for its draft on its height and the difference in temperature of the air on the inside and outside. If the air inside the chimney is chilled by dampness or because the chimney is exposed to cold winds on the outside of the house, it will not draw well. For this reason, the best location for a chimney is in the center of the building where all four walls are protected. Exposed walls should be at least 8 inches thick.

There should be no holes in the chimney other than those necessary for the smoke pipe. It is not a good plan to connect two furnaces in the same building to the same smoke flue. One may interfere with the draft of the other. Stove pipe holes above the basement must be closed tightly and the portion of the chimney below the smoke pipe hole as well as the part above must be air tight if the chimney is to have a good draft. Every pipe entering the flue should have a tight metal or cement collar three inches wide to prevent leakage into the chimney. The smoke pipe should not project into the smoke flue, but simply come flush with its inside surface. If two flues are separated by a partition wall in the same chimney, the partition should run the full length of the chimney and be air tight.

Foundation of Furnace and Cold Air Supply.

The next important matter is to have the furnace well set in the cellar. If possible, it should be set slightly toward the sides exposed to the prevailing winds so as to give these rooms the advantage of shorter flues. The smoke pipe should not, under ordinary circumstances, be longer than six feet and should pass to the chimney as directly as possible. Some manufacturers favor a pit under the furnace into which the cold air enters. This gives a somewhat more effective distribution and circulation of the cold air, but adds expense. If a pit is used beneath the furnace, it should be not less than 12 inches or more than 16 inches deep. The duct leading to it should be brick, cement or tile, never of wood, for wood will shrink, rot or be gnawed by rats and mice. Holes in the duct let in bad odors and even vermin. In no case should any air be taken from the cellar.

If a pit is not used, the furnace should be set on a good, clean brick or cement foundation, never on a dirt floor. Never set a furnace on a dirt floor and then expect to pour cement around it and into the air space. Cracks are bound to be left and dust and sand will be carried up into the house with the circulating air. The air supply may be taken from within the house from outside or from both sources. Naturally the heating of cold outside air in large quantities requires more fuel than to reheat the air within the house. The object of the outside air duct is to admit fresh air for ventilation. In buildings in which large numbers of people are gathered, an outside air supply is imperative. For the small family, air leakage around doors and windows and air admitted through open doors and windows will probably be sufficient for ventilation, unless the house is one of unusually tight construction and kept closed much of the time. The outside air intake is no more necessary for a furnace than for a steam or hot water plant.

If an outside air supply of any considerable capacity is installed, vent flues must be provided somewhere in the building or an open fireplace may be used for this purpose. If only a very small amount of air is taken in from outside, say one sixth of the total supply for the furnace, this will find its way out by leakage and special vent flues are not necessary. The outside air pipe should, in all cases, be fitted with a tight damper which can be closed in severe weather. The outside opening should be on the windward side of the house and be protected by a screen to keep out dirt, leaves and even birds and small animals. If the cold air supply is taken from the house, the registers should be located in the coldest parts of the rooms, at the foot of a staircase or in the hall. Wall registers located in a side wall or side of a staircase are probably not efficient as floor registers, but are more pleasing in appearance and less apt to gather dirt. A cold air duct should not be located in the middle of the floor because there will be an unpleasant cold draft toward it. The area of the cold air duct should be at least equal to the combined area of the warm air pipes. When a pit is not used, the cold air ducts should enter at the rear or from both sides of the furnace casing at the bottom line, whether they take the air from outside or from the rooms above. Sometimes a room needs a special return or vent flue in order to heat. A return flue should not be placed in bathrooms or kitchens for obvious reasons. Instead of a return flue, these rooms should be provided with vents to the outer air covered by a wall register, which can be opened and closed. It is not a good plan to install a return flue in a bedroom because if a sick person is confined there, the disease germs may be scattered over the house in the recirculated air.

Flues and Casing.

Some furnaces are set in brick, but it is more common to set them in a sheet steel galvanized casing. The casing should be double with asbestos lining between. This prevents heat loss and consequent heating of the cellar. The heating pipes may be taken from the top or sides of the furnace bonnet. In either case there should be a layer of sand on the top. Pipes should not be taken from the top and sides on the same furnace because the pipe taken from the top will steal the heat from the other pipes. Pipes, taken from the side, should have their tops, not their centers, on the same level. Each warm air pipe should have a pitch of not less than 1 inch in 12 inches, better 1 inch in 10 inches and the pitch of all pipes should, so far as possible, be alike. Abrupt corners should never be used. Long bend elbows and a proper form of boot should be employed. It is not a good plan to use a pipe smaller than 9 inches.

Choosing a Furnace.

Furnaces should be purchased from a reliable dealer with a guarantee and installed by an experienced furnace man in accordance with specifications made out by someone who understands thoroughly the engineering questions involved. The following are some points to be considered by the purchaser when selecting a furnace.

The doors should have solid hinges, a good catch and fit tightly, otherwise it will be almost impossible to keep a fire burning slowly because the cracks will let in too much air. There should be a damper in the firing door and ash pit door. At the rear of the furnace there should be a direct draft damper or door, opening automatically or otherwise when the firing door is opened. This allows the gases to pass quickly and directly into the chimney and prevents smoke from issuing into the cellar when the furnace is being fired. Clean-out doors should be provided so that soot and ashes can be

cleaned from the heating surfaces conveniently. A door into the warm air space is an excellent feature because this allows dirt and dust to be swept or washed out from the warm air space. Few furnaces have this feature. Some furnaces are provided with an annular space around the firepot and holes or slots leading from it to the combustion chamber. This provides air for burning the gas coming from the coal and is a desirable feature when burning coal containing a large amount of gas, such as Illinois or Iowa soft coal. Some means, however, ought to be provided for shutting off this air when the coal has burned down to coke. The door to shut off and admit this air is often called "the air blast door" or "hot blast door."

Firepot and Grates.

Some furnaces have a fire-brick and some a cast iron firepot. Each has its advantages. A firebrick firepot may be broken in one place and easily mended. A cast iron firepot, if cracked, is more difficult to repair. To facilitate such repairs, well designed furnaces with cast iron firepots have them made in sections. A cast iron firepot transmits heat somewhat more rapidly than the firebrick and on the other hand does not retain its heat quite so long. Fireclay is also used in the firebox of some furnaces. It is objectionable because it breaks off and drops out when heavy coal is used. One of the chief things to look for is a deep firepot. A shallow firepot will not be satisfactory in keeping a fire or in burning the coal clean. The kind of grates to be used depends on the kind of coal to be burned. As a rule the rocking grates are most satisfactory, especially for soft coal.

The radiator or heating surface of a furnace is the metal surface on one side of which there is fire or hot gases and on the other the air to be heated. In a good furnace there will be a large radiating surface and the gases will not pass directly out to the smoke pipe. A good draft is necessary to carry the heated gases through a furnace with a large radiating surface. The radiator may be of steel or cast iron. Steel being riveted is tight against gas and has no cement joints. On the other hand, steel will corrode rapidly if dust, soot and ashes are allowed to accumulate on the surface and the air is damp. Steel furnaces with good care will last for years. Cast iron radiators corrode less rapidly, but have joints which may possibly leak gas. On account of their rough surface they are probably more effective in giving off heat than the steel radiators. The choice is largely a matter of personal opinion.

The Size of Furnaces.

The size of a furnace is designated by the diameter of its grate. Its rating as given by the manufacturer is usually the number of cubic feet which it will heat to 70 degrees when the outdoor temperature is zero. This method of rating is unsatisfactory as it does not take into account the construction, wall exposure, and glass surface of the building. A more satisfactory method, already adapted by some manufacturers, is to state the capacity of the furnace as the number of square inches of heating pipe area it will supply. One rule sometimes given is to allow one square foot of grate for every 5,000 cubic feet of contents of the building. Furnaces installed on this basis would usually be too small if soft coal were used as fuel. Such rules are, at best, good only for rough estimates. A satisfactory warm air system should be carefully designed by a competent engineer, architect or furnace man. The details of such a design are not given here as they are matters for the architect and engineer and not for the layman. One thing, however, should be remembered; the heating capacity of a furnace is not to be judged by the size of its outside casing. The firepot, grate and radiating surface are the points to be examined. It is not economy to buy a furnace with too small a grate and heating surface and a reliable engineer or furnace dealer will not recommend one.

ELECTRICITY VERSUS COAL FOR HEATING.

A writer in the New York City *Electrical World*, who has been carrying out experiments in the heating of dwelling houses by means of coal and electricity, has come to the conclusion that, with electricity at ½ cent per kilowatt hour, it is from 25 to 50 percent more expensive than for coal at $6.00 per ton. At 1 cent per kilowatt hour, the electricity is two and one-half or three times as costly. These figures are borne out by theory, which indicates that the 10,000 B.T.U. in a pound of coal cost 1/6 cent, while in the form of electrical energy, the 3413 B.T.U. in a 1 kilowatt hour will cost ½ cent, making the current roughly five times as expensive. Then allowing for a furnace efficiency of 40 percent, which is fair for the ordinary furnace, the current should prove twice as expensive. A hot water radiator system was employed in both cases.

WARM AIR HEATER GRATE WHICH INCREASES EFFICIENCY.

One of the most important features in the Pyramid Warm Air Heater is the grate which can be raised to a conical position by moving the upright lever to the left, as pictured in the accompanying illustration. By this action the central portion of the grate can be elevated to any desired height, and by the movement of the grate bars the fire is rolled to the outside of the firepot, forcing the red hot fuel directly against the sides or radiating surface of the warm air heater. This permits the operator to charge fresh fuel in the center, and as the fire is free to continue burning, the intense heat from the ring of fire is said to gradually coke the surface of the fresh fuel and thus consume the smoke and gases. The grate can be shaken little or much, is always ready for use, and is splendidly adapted for burning cheaper grades of soft coal—in fact, one may well be pardoned for saying that "the grate is simply great." Full details regarding the construction of Pyramid Warm Air Heaters can be obtained by addressing the Forest City Foundry and Manufacturing Company, Cleveland, Ohio.

Showing How Grate of Pyramid Warm Air Heater Is Operated.

INTRODUCTION OF SUFFICIENT MOISTURE IN AIR RELIEVES CATARRHAL TROUBLES.

The evaporation power of the air at a relative humidity of 30 percent is very great, and when the tissues and delicate membranes of the respiratory tract are subjected to this drying process, a corresponding increase of work is placed upon the mucous glands in order to keep the membranes in proper condition, so that nature in her effort to compensate for the lack of moisture in the air, is obliged to increase the functional activity of the glands, and this increase of activity and the frequent unnatural stimulation, induced by the changing conditions of humidity from the moisture-laden air outside, to the arid atmosphere within our dwelling, finally results in an enlargement of the gland tissues, on the same principle that constant exercise increases the size of any part of the animal organism. Not only do glands become enlarged, but the membrane itself becomes thickened and harsh, and sooner or later the surface is prepared for the reception of the germs of disease, which tend to develop under exposure to the constantly changing percentage of humidity. It might be interesting to notice some remarkable cases which have come under observation where catarrhal troubles have been relieved and apparently cured by simply introducing sufficient moisture into the air to bring the conditions to something near normal.—Dr. W. M. Wilson.

PRACTICAL HELPS FOR THE TINSMITH

PATTERNS FOR TRANSITIONAL ELBOW.

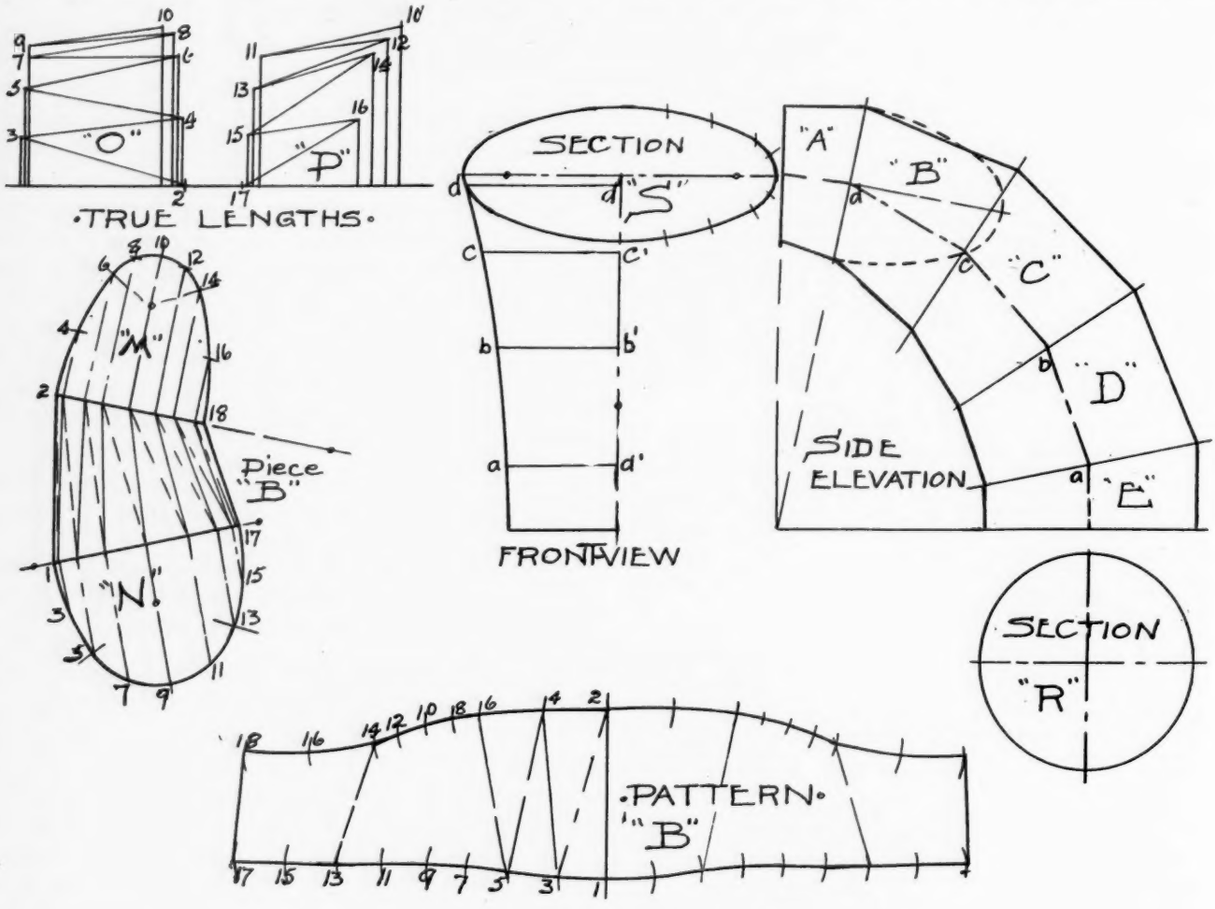
BY O. W. KOTHE.

Sheet Metal men are afforded very few opportunities to lay out transitional elbows from round to ellipse. But where such is the case, then first draw your side elevation. Just where to strike the quarter circle, whether at the heel as in this case or at the throat or center must be determined from measurements of the job. Then draw your miter line as shown. The section "R" shows that the lower end is round.

Next, draw the elliptical section "S" and with it, construct the half front view, drawing the side line a-d at pleasure. Then from each point as a-b-c-d in side elevation, square over points cutting the front view as lines, a'-a; b'-b; c'-c; d'-d. These lines are your half diameters through those points in side elevation.

It will be observed the section "S" is the true view for the end of piece "A." The miter between piece "A" and "B" requires an ellipse equal in length to twice e'-d for its full length or half as here shown by the dotted section. Then the miter line between piece "B" and "C" will have to be made in length equal to b'-c, that is, for half the length of section.

In this case we will lay out the elbow part "B", which is reproduced at the left of the sketch. The half section "M" is a duplicate of the dotted section in elevation. The one "N" is made to suit the length c'-c. Through these points draw your ellipse. This may be done in any one of a dozen ways. Divide the



Development of Patterns for Transitional Elbow.

division of each curve into equal spaces. That is, the space from 2 to 6 is longer and requires less spacing, while the curve 6-14 is narrower and requires more, so as to establish the points properly.

Next, draw your line square to the miter lines and then draw your triangular line. The next step is to get your true lengths; all those lines to the left of 9-10 are shown in diagram "O" while the others are shown in "P". This is done to avoid confusion.

The pattern can then be set out by starting with line 1-2 in elevation as line 1-2 in pattern. Then for the top stretchout, use the spaces in section "M", and for the stretchout at the bottom use the spaces in section "N". Pick all your true lengths from your diagram "O" and "P". In this way, by the triangling process, you walk from one point to another until

points 17 and 18 are established. This gives you your first pattern. This process must be duplicated for each and every piece in the elbow and laps for seaming must be allowed extra.

OFFICIALS OF ILLINOIS SHEET METAL CONTRACTORS ASSOCIATION DISCUSS PLANS FOR CONVENTION.

At a meeting held on Wednesday afternoon, May 16th, at the Auditorium Hotel, Chicago, the officers and directors of the Master Sheet Metal Contractors' Association of Illinois discussed plans and completed arrangements for the Annual Convention which is to be held in Chicago on May 22d. The officers and directors of the Association are:

President—Fred de Coningh, Chicago.

Vice-President—Rudolph J. Jobst, Peoria.

Secretary—David M. Haines, Chicago.

Treasurer—Frank T. Reuter, Kankakee.

Directors—Charles N. Louis, Peoria; Harry C. Knisely, Chicago; and George Harms, Peoria.

CHICAGO SHEET METAL CONTRACTORS ELECT DELEGATES TO NATIONAL CONVENTION.

At the regular meeting of the Allied Sheet Metal Contractors' Association of Chicago on Tuesday evening, May 15th, the following were elected delegates to the National Convention of Sheet Metal Contractors, which is to be held in Cleveland, Ohio, June 12 to 15:

Regular delegates: O. M. Bales, A. E. Detweiler, and W. W. Rockwood. Alternates, John Peterkin, E. Renisch and James Black.

While these were selected at the meeting to attend the convention officially, it is expected that there will be a large number who will also attend in an unofficial capacity.

SAMPLES OF ROOFING PLATE FOR DESK OR WALL USE.

The Merchant & Evans Company, Philadelphia, are sending out a hanger suitable for wall or desk use which shows samples of five grades of their roofing plate. The specimen plates measure five by seven inches in size, are stamped like the regular article, and arranged so that they can be easily inspected. Each is preceded by a card which describes the method of manufacture and the quality, the reverse side of the cards being used to feature other Merchant and Evans products, such as the Star Ventilators, Metal Tiles and Shingles, Tinsmiths' Supplies and Merchandise, Evans Almetl Fire Doors, Bright Tin and Sheet Metals, and Brass and Copper. The samples of terne plate shown, Merchant's Old Method, Franklin Old Style, Liberty Old Style, Sheldon Old Style and La Salle Old Style, are said to offer a range of sheets for all needs. Full particulars of any of the products can be obtained by addressing the Merchant & Evans Company, Philadelphia or Chicago.

HARRY F. PORTER TO SPEAK ON COSTS AND OVERHEAD AT ILLINOIS SHEET METAL CONVENTION.

Harry Franklin Porter, of the Executives' Club of the Detroit Board of Commerce, will deliver the address on "Costs and Overhead Expense of a General Sheet Metal Shop" at the afternoon session of the Annual Convention of the Master Sheet Metal Contractors' Association of Illinois, which is to take place Tuesday, May 22d at the Auditorium Hotel, Chicago. Mr. Porter suggests that all members come prepared with questions so that the discussion to follow will prove a lively one and many points of interest will be dwelt upon.

PATENTS SOLDERING COMPOUND.

Francis E. J. Litot, Wilkinsburg, Pennsylvania, has obtained United States patent rights, under number 1,224,941, for a Soldering Compound, described herewith:

A soldering compound, containing zinc, tin and lead, the tin and lead being each not less than the zinc, so as to reduce the melting point of the zinc to a safe limit below the heat which would injure the parts being soldered.

EFFICIENT SOLDER FOR ALUMINUM COOKING UTENSILS.

Aluminum cooking utensils have in recent years attained such a widespread popularity and are today in such extensive use that a large demand has naturally arisen for a preparation by which such ware can be soldered satisfactorily. No cooking utensils are immune to destructive agencies and it is to be expected that in numerous instances the aluminum ware will require mending. For this purpose, a flux and special solder has been prepared by George E. Roesch, Aurora, Illinois, which is said to solder aluminum cooking utensils satisfactorily, without leaving the repaired portion rough and unsightly. The noteworthy feature of this solder, the manufacturer declares, is that only a small amount is required—just enough to "tin" the surface around the damaged spot—after which ordinary solder is used so that the mend can be finished smoothly, a regular soldering iron being used. Further particulars and price list can be obtained by addressing George Roesch, Aurora, Illinois.

AMERICAN ARTISAN IS GREAT BENEFIT.

To American Artisan:

We wish to say that we have been greatly benefited by American Artisan and wish to be considered as one of its staunchest friends.

Yours very truly,

George O. Wilson,
Publicity Manager for J. S. Radford.

Newbern, Tennessee, May 14, 1917.

You don't have to hang up mottoes any more which read: "Don't talk war; talk business," because business is now making so much noise on its own account as to even drown out the war.

PROCESS OF STEEL MAKING BROUGHT TO HIGH POINT OF PERFECTION.

In a very interesting and instructive lecture given by R. J. Kaylor, publicity manager of the Youngstown Sheet & Tube Company, Youngstown, Ohio, before the Binghamton, New York, Chamber of Commerce, an outline was presented of the wonderful progress which has been made during the past two decades, as exemplified in the great plants of this company. Mr. Kaylor said in part:

Since the invention of the Bessemer and Open Hearth processes for making steel, that material has almost displaced wrought iron in the manufacture of many of the articles used in ordinary life, which were formerly made of wrought iron. This is due not only to the fact that steel possesses many qualities that render it superior to iron, but also because it has all the working qualities of wrought iron, and, being made with a minimum of manual labor, can be produced much more cheaply. In pipe, as well as in many other fabricated materials, steel has therefore almost entirely supplanted iron. In the works of the Youngstown Sheet & Tube Company, of Youngstown, Ohio, both steel and wrought iron are produced, the company operating fifty double-puddling furnaces, as well as a duplex Bessemer converting plant, and twelve 100-ton open hearth furnaces. Nevertheless the greater portion of the annual output of tubular goods manufactured by the company, approximating 500,000 tons each year, is made from steel, iron being used, however, in the making of couplings, because it gives better results for this purpose.

Ore Mining.

The process, as carried on by this company begins with the mining of ores. These are obtained from its own mines, in the Lake Superior region, and transported to the blast furnaces at Youngstown, Ohio, principally by water. It is necessary, in this work, to handle the ores of the upper and lower lake ports, and this is done by the most modern machinery. When the ore reaches the furnaces, the railroad cars on which it is loaded are lifted bodily and emptied upon great stock piles, from which it is transferred to the mixing bins by huge buckets operated on ore bridges.

From these bins the ore, with the necessary coke and limestone, flows by gravity into the skip cars which elevate it to the top of the furnaces and automatically deposit it therein. The modern blast furnace, of which this company operates six, is about 90 feet high and 27 feet in diameter at the largest part, and is a tremendous proposition. Ore, coke and limestone are charged at the top in the proportion of about two tons of ore, one ton of coke and three-fourths of a ton of limestone, this operation being practically continuous and the charge, or burden, as it is called, descending through the stack as the materials mentioned are melted, coming out at the bottom as iron and slag. In addition to this, about two and one-half times the weight of all other raw materials is charged in the form of air.

Blowing Engines.

This air is driven by great blowing engines through stoves, in which it is heated to a temperature of about 1,000 degrees Fahrenheit before entering the furnace at the tuyeres, which are about twelve feet above the hearth, or bottom. The stoves, of which there are usually four, are 100 feet high and 22 feet in diameter, lined with a checkerwork of brick on one side and having a combustion chamber on the other. These stoves are heated alternately, two at a time, by gases brought from the furnace through large pipes, washed and burned so that the heat and products of combustion pass through the checkerwork, heating it to a red heat. The blast, being later driven through this hot checkerwork, takes up the heat. At intervals of about two hours, the process is reversed, that being the time required to cool two stoves and heat the other pair. In addition to this, a part of the gases from the furnace top is burned beneath a battery of 36 400-horse power boilers, and there power is generated for blowing the blast.

Air Blasts.

In the popular mind, ore, coke and limestone form the greater part of the charge, but this is not the case. For every ton of iron produced, about nine tons of air are blown through the furnace. This will not be surprising when it is known that each of the four stacks shown in the accompanying illustration requires about 57,000,000 cubic feet of air at a pressure of about 15 pounds per square inch, each twenty-four hours.

The purpose of the ore is, of course, to yield iron. The limestone is used as flux, to take up impurities, and the coke is burned to produce the necessary heat for reducing the ores and melting the iron. Iron is much heavier than the slag, or flux, and this makes possible their separation, the iron sinking to the bottom of the furnace and the slag floating over it, much as cream rises to the surface of milk for the same reason. The operation of a blast furnace goes on night and day, sometimes for years, ceasing only when the firebrick lining has been worn out, or when it is necessary for some other reason to bank the fire or "blow out" the stack for a shut down of great length. The six stacks produce an average of 3,000 tons of iron each day of the year, the battery consuming in the way of ore, coke, limestone and air an average of 25,000 tons each twenty-four hours, or about 9,000,000 tons per year. In addition, the company has two furnaces of somewhat smaller size.

The product of a blast furnace is known as pig iron, because it was formerly allowed to run from the furnace into grooves in a sand bed, small grooves debouching at right angles from a larger main channel. When cooled the iron was broken up into small pieces known as pigs and had to be remelted. Now it is generally run into ladles, at least in steel plants, and transferred to a mixer. From this it goes to either Bessemer converters or to open-hearth furnaces to be made into steel.

Bessemer Process.

The Bessemer converter is a pear-shaped vessel, lined with fire brick, and holding about ten tons of molten metal at one charge. After this metal has been drawn from the mixer, where it was placed for the double purpose of keeping it hot and securing uniformity, it is poured into the converter by means of a large ladle handled with cranes. The converter swings on trunnions and at the bottom is a compartment, known as the "wind box," into which air under pressure is admitted as the vessel is turned into an upright position. The molten metal, which is poured into the lower side of the converter, flows to the bottom as it is tilted upward, and the air is thus forced through the mass, entering at many small openings in the bottom.

When a Bessemer converter is filled and tilted to an upright position, the resulting phenomena are the most spectacular to be seen in a steel plant, where there are many stirring sights. The air rushes through the hot metal, still further raising the temperature, and escapes at the mouth of the vessel in a great shower of flame and sparks, brilliant beyond description. As the temperature in the converter rises, the carbon is first attacked, then the silicon and next the manganese, these impurities being burned out of the iron and its characteristics changed so that it becomes steel. Usually a small portion of the manganese is added afterward to secure the right conditions for working. Two converters in the plant of the Youngstown Sheet & Tube Company thus treat about twenty tons of iron every twenty minutes, even less time being required under some conditions. Both are operated day and night.

The open-hearth process which has come into favor in recent years, because it produces steel better for some purposes and at the same time permits the use of ores containing sulphur and phosphorus (which cannot be successfully eliminated in the Bessemer converter), consists of slowly boiling iron in a furnace heated by gas. In a few instances powdered coal or oil has been successfully used for fuel. In ordinary practice, the gas flame is allowed to play over the surface of the metal, the furnace being lined with fire brick made of material having an affinity for the impurities in iron. While the hot gas flame eliminates the excess carbon the linings take up silicon, sulphur and phosphorus.

This process requires ordinarily about ten hours, the amount of metal treated depending on the size of the furnace. It offers the advantage of treating metal in a way that cannot be done in the Bessemer converter, samples being taken at frequent intervals for analysis and the process regulated accordingly. In practice, this careful examination of materials and products is carried out at every point, samples being taken from the ores, coal, coke and limestone, as well as from the iron produced at each heat drawn from the blast furnace. Similar analyses are made of each heat of Bessemer steel, but that process is so rapid that, except by the regulation of the iron treated, the product cannot be materially affected by manipulation during conversion.

Cast In Ingots.

The next process encountered in the manufacture of steel is necessary to bring the metal into working condition. When poured from either Bessemer converter or open-hearth furnace, it is cast in ingots weighing several tons each. These solidify on the outside first, leaving the interior still plastic, and it is necessary to heat them uniformly after the molds are removed. This is done in what are known as "soaking pits"—furnaces mainly under ground and heated by gas. From these the ingots go direct to the blooming mills, where they are "broken down," or rolled into blooms—lengths of steel about six inches square. These are cut into short lengths and go to various other mills, by which they are rolled into the particular form suitable for further fabrication.

If intended for the manufacture of rods, and later into wire, the steel is rolled into billets about two inches each way and twenty feet long. If for bars, the blooms go direct to the bar mills. If for sheets, the next step is rolling into sheet bars—about one-half inch thick and six inches wide, and so on for all the various products.

Pipe Manufacture.

In the manufacture of pipe, steel blooms are sent to the continuous mill and rolled into skelp, which is the name given to long thin strips of steel of the width necessary to produce pipe of various sizes. The larger sized skelp is made from slabs, which are rolled on a universal plate mill, the edges being rolled true at the same operation reducing the thickness and increasing the width and length. But whether the plates are one inch wide or more than sixty inches wide—the size necessary to produce 20-inch lap-weld pipe, they are known as skelp and as such go to the tube mill furnaces, after being cut into suitable lengths on powerful shears.

In the tube mill furnaces, the skelp is heated to a welding temperature after being charged at the rear of the furnace and is taken out through doors in the front end. At this end stands a man with face protected by a mask and goggles. He slips an iron ring, shaped somewhat like a bell, over a pair of tongs and inserts these in the furnace, fastening them on a piece of skelp. Then he drops the handles of the tongs on a moving, endless chain, which engages them and drags both skelp and bell from furnace. Just outside a contrivance automatically stops the bell, while the skelp goes on in the grip of the tongs, which are later automatically released. As the skelp is drawn through the bell, the edges are pressed together and welded. The illustration herewith gives a good idea of the process, which goes on with great rapidity, 350 to 400 feet of pipe per minute being an average production in the smaller sizes. The man at the furnace door works but a short time, alternating with others. His work is hot and hard, and he is so skilled that the ordinary observer is not likely to see where the bell comes from or where it goes after the pipe is welded. A blast of cool air blows constantly upon the workmen in this position, as in all others where unusual heat is encountered. The handling of the metal, except for the attaching of the tongs, is done entirely by machinery.

Various Processes.

After being welded by the bell, the pipe goes through sizing and straightening rolls, and thence to the saws, which cut off both ends squarely. It cools as it moves along and when the threading floors are reached, it has been straightened and is ready for the cutting of threads. In this plant, pipe is manufactured with either American or English standard threads, depending on whether it is intended for domestic use or for export.

The next operation is testing. This is done by hydrostatic pressure, the various sizes being subjected to an internal pressure far above any likely to be encountered in use, and rejected if the slightest leak results. Finally each length is carefully inspected for any imperfections before being sent to the warehouse for shipment.

The above description refers to the manufacture of butt-welded pipe, which process is used on pipe up to three inches in diameter. The lap-weld process is used on pipes of sizes 2½ inches in diameter or larger. This process is not so rapid as butt-welding, but affords greater strength, which is necessary in large sizes and also in sizes above 2½ inches where the pipe is intended for severe service under high pressure.

Five of the ten tube mills in the Sheet & Tube plant are usually employed in making butt-weld pipe, and these five mills are capable of producing about 500 miles of pipe per day if run on the smaller sizes.

Pipe manufactured by the Youngstown Sheet & Tube Company is treated in various ways for various purposes, some of it being galvanized, some painted, and some treated with asphalt, tar and other preparations to fit it for special uses.

The tube mills of this company occupy a large amount of space and employ several thousand men in various operations connected with them.

In making lap-weld pipe, in which the edges are lapped and then welded, instead of being welded edge to edge as in the other processes, the steel skelp is first curved in the form of a tube with the edges extending slightly over one another. The unfinished tube is then reheated and run through rolls between which is placed a mandril. The mandril is simply a piece of round iron equal in size to the inside diameter of the finished pipe. It forms the anvil on which the pressure of the rolls does the welding. The mandril is mounted on the end of a long beam, over which the pipe passes after leaving the rolls, these rolls having faces so curved as to exert equal pressure on every part of the round surface.

After lap-weld pipe has been welded, it is run through sizing rolls, which make it smooth and round, and then straightened while still hot. After cooling, the ends are sawed off square and the pipe again straightened while cold. Later it goes to the threading machine, and is equipped with genuine wrought iron couplings, as is all pipe bearing the name "Youngstown."

Making Couplings.

These couplings are forged by steam drop hammers from puddled iron in a huge shop covering four acres. It has been found that iron on steel makes a better and more enduring tight joint than does steel on steel, and therefore "Youngstown" pipe is equipped entirely with this form of coupling. It is a valuable feature of the tubular products of this company, in the providing of which a large part of the iron produced from the puddling furnaces is required.

All sizes of pipe are treated in these works to various processes which render it specially suitable for use under many different conditions. Some of these processes are galvanizing, enameling, coating with tar, painting, etc.

In the works of the Youngstown Sheet & Tube Company more than 10,000 men are employed at this time, and the number is increasing rapidly. More than $15,000,000 has been expended during the past two years and extensions estimated to cost about $4,000,000 are now in progress. The works have grown steadily and with remarkable rapidity since the company was organized in 1903, at which time it had capacity for the production of wrought iron alone, no steel being made. At present it owns its own ore and coal fields, makes its own coke, and has capacity for approximately 1,800,000 tons of Bessemer and open-hearth steel per year. The greater part of this steel is manufactured into various products in the plant, pipe being the largest single item, and the ten tube mills use about half a million tons of steel annually.

During the past year the administration building at the works, the laboratory and hospital were completed.

During the year 1916 the company completed extensions and improvements in its works involving an expenditure of about $12,000,000. Among the notable units completed is a by-product coke plant of 204 ovens, with an annual capacity for the production of 850,000 tons of coke.

NEW SHEET METAL ORGANIZATIONS BEING FORMED IN MICHIGAN.

The sheet metal and plumbing contractors of Hastings, Michigan, met on Thursday evening, May 10th, at Weissert Brothers' store for the purpose of discussing the formation of an Association. Ten of the Battle Creek Association were present and conducted some blackboard demonstrations. Another meeting has been called at which time the organization will be completed.

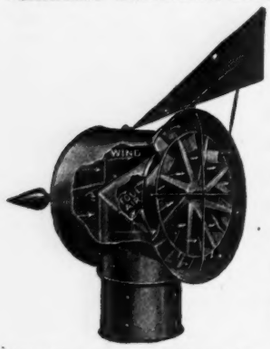
The Greenville, Michigan, sheet metal and plumbing contractors met recently to discuss plans for forming a local association. Frank E. Ederle of Grand Rapids, secretary of the Michigan Sheet Metal Contractors' Association, was present and helped the young organization to get the right sort of a start.

FOUR WEEKS TO MAKE A METAL SHEET.

It requires at least four weeks to make a Toncan Metal Sheet, while an ordinary metal sheet can be made within one week. The reason for this is given by the manufacturers in the following statement: In making Toncan Metal Sheets, every detail is carefully watched. The iron ore is selected, not from any one mine, but from the deposits of the most desirable ores all over the country. Special furnaces and appliances are used and special crews of men are employed—men who have had years of experience in sheet metal making. To reduce the impurities, it is necessary to permit the molten metal to remain in the furnaces for an unusually long time, at a very high temperature. This is costly because the terrific and prolonged heat destroys the furnace linings and makes frequent replacements necessary. At different stages of production analyses are made to insure uniformity and the desired degree of purity, and finally a rigid inspection of the finished sheets is made. The result is a Toncan Metal Sheet, a durable, long-lived sheet capable of withstanding severe weather conditions. Full particulars of its manufacture and uses can be obtained by addressing the Stark Rolling Mill Company, Canton, Ohio.

ROOF FAN VENTILATOR WORKS IN CALM AS WELL AS WINDY WEATHER.

Having been questioned as to whether the fan wheel of the Bicalky Roof Fan Ventilator would rotate in calm weather, the manufacturers recently arranged for observers to watch their ventilators during a period of several days; and at no time, they say, did the wheels fail to rotate. This uninterrupted action of the fan is attributed to the scientific construction of the ventilator illustrated herewith, which is such that the currents of outside air come in contact with the fan wheel at the outside or periphery, and not at the center. Hence very little energy is required to turn it, while at the center the energy required would be much greater. It is generally known that if you should apply power to the center of a rotable object, relatively much more energy is required to turn it than if the power were applied at the outside of the wheel—in other words, the air currents coming in contact with the wheel at the outside give it a tremendous leverage, which insures positive ventilation at all times. Further information is contained in the booklet of Bicalky Roof Fan Ventilators, which will be sent upon request, by the Bicalky Fan Company, Buffalo, New York.



Bicalky Roof Fan Ventilator.

WHO MAKES GLENDALE DOOR LOCKS?

To AMERICAN ARTISAN:

Can you tell us who makes the Glendale Door Locks?

SUBSCRIBER.

———, Illinois, May 16, 1917.

NOTES AND QUERIES.

Aluminum Specialties.

From W. W. Vanderlinden, 1210 A Avenue, West, Oskaloosa, Iowa.

Can you advise who makes aluminum specialties?

Ans.—Aluminum Specialty Company, Manitowoc, Wisconsin; American Aluminum Manufacturing Company, Lemont, Illinois; and Cassidy Fairbank Manufacturing Company, 6126 South LaSalle Street, Chicago.

Letter Patterns for Signs.

From the Cole Plumbing and Electric Company, Tonasket, Washington.

Kindly advise where we can get a set of letter patterns for making up electric signs.

Ans.—A. Klintz and Company, 905 West Randolph Street; Zero Marks Sign Works, 126 North Peoria Street, and the Multiform Sales Company, 1926 South Wabash Avenue; all of Chicago.

Mercury.

From W. W. Vanderlinden, 1210 A Avenue, West, Oskaloosa, Iowa.

Please tell me where I can purchase mercury.

Ans.—Atkins Kroll and Company, 311 California Avenue, San Francisco, California; Haas Brothers, 61 Broadway, New York City; and McKesson and Robbins, 91 Fulton Street, New York City.

Nickel Plating Work.

From G. F. Chapman, Linton, Indiana.

Some time ago, I noticed an advertisement in AMERICAN ARTISAN soliciting nickel plating work. Can you advise who does this work?

Ans.—Roesch Brothers Plating Works, Belleville, Illinois.

Rowlett Lawn Mower.

From the Arlington Hardware Company, Arlington Heights, Illinois.

Please tell us who makes the Rowlett Lawn Mower.

Ans.—This was formerly manufactured by the F. and N. Lawn Mower Company, Richmond, Indiana.

Ornamental Tin Cigar Boxes.

From M. F. Shafer and Company, 12th and Farnam Streets, Omaha, Nebraska.

Will you advise who makes ornamental tin cigar boxes which appear to have been enameled before being stamped and formed?

Ans.—These were manufactured by the American Can Company of New York City and Chicago who have discontinued the manufacture on account of a ban put on them by the Government.

ITEMS.

The Rochester Stamping Company, Rochester, New York, is planning to build a two-story addition to its plant, measuring 45 by 120 feet. George W. Robesson is president of the Company.

The Hart Manufacturing Company, Grand Rapids, Michigan, manufacturers of sheet metal and brass products, will move to Knoxville, Tennessee. The Company has been incorporated in Tennessee with a capital of $60,000 by H. M. Taylor, D. A. Isely, E. R. Taylor and others.

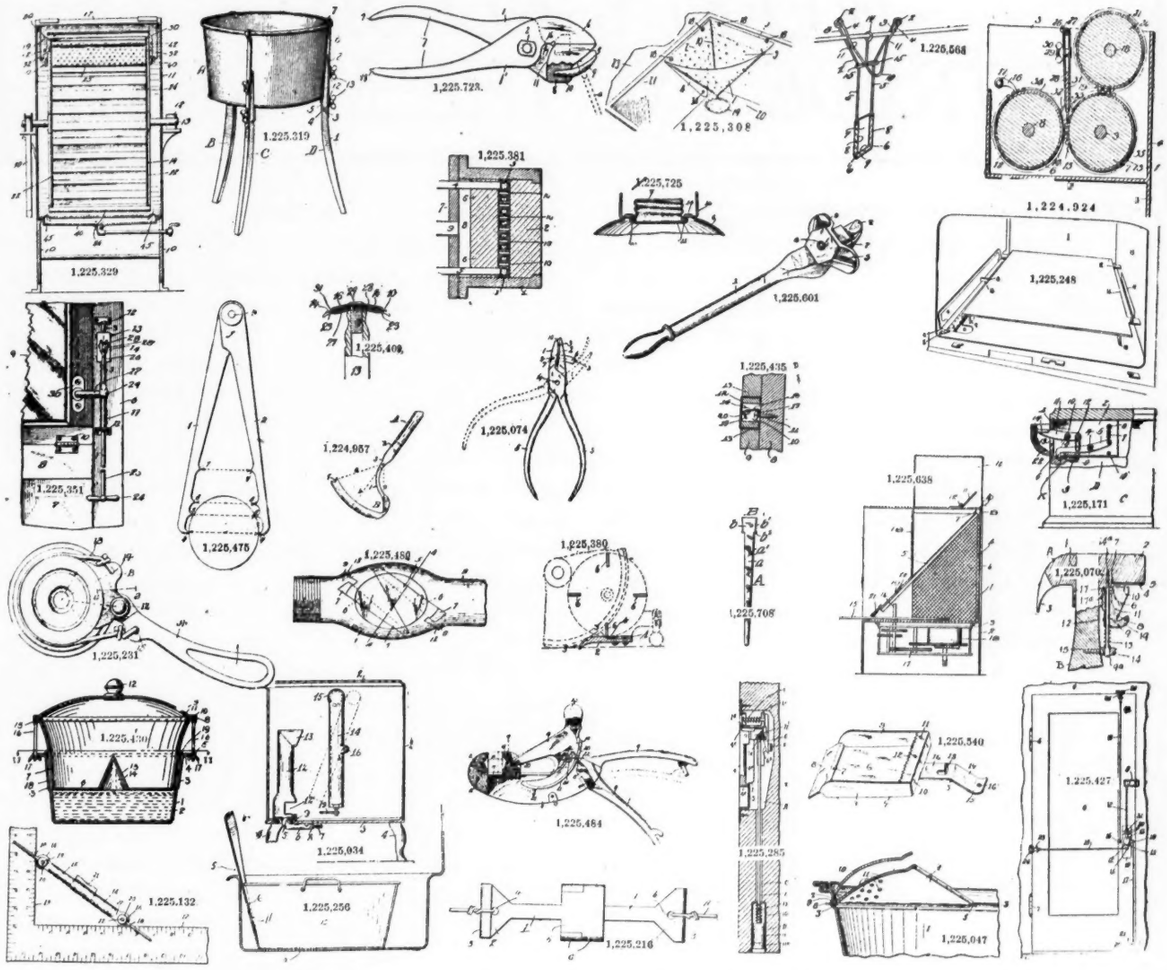
H. M. Steele has become general-manager of the recently organized Liberty Steel Company for the manufacture of sheet steel, at Warren, Ohio, having resigned as manager of the Guernsey works of the American Sheet and Tin Plate Company at Cambridge, Ohio, to accept the new position.

The partnership formerly existing between James O'Halloran and A. C. Jacobs, of Pittsburgh, Pennsylvania, was dissolved on April 3d and is succeeded by the Jacobs-Thompson Company who will conduct a general jobbing in all kinds of roofing slate and roofing supplies, with their principal offices in the Park Building in Pittsburgh.

The Cincinnati Sheet Metal Contractors' Association, at a meeting held May 10th, gave careful consideration to the proposed changes in the constitution of the National Association of Sheet Metal Contractors. The members approved of the changes and the delegates to the National Convention at Cleveland in June, will be so instructed.

Several auxiliary members of the Michigan Sheet Metal Contractors' Association who live in Grand Rapids are itching to try their ability as ball players. They are confident they can defeat a similar team of any city in Michigan. They are particularly interested in having U. L. Pierson, Jr., of Detroit take notice of this challenge. The captain of the Grand Rapids aggregation is Charles Nason, who was captain of the Waiters' Union Number 9 at the state convention.

NEW PATENTS.



1,224,924. Safety-Razor-Blade Sharpener. Peter D. Hauser, San Antonio, Tex. Filed Aug. 10, 1916.

1,224,957. Garden-Tool. Charles W. Robinson, Battle Creek, Mich. Filed Dec. 20, 1915.

1,225,034. Gas-Radiator. Charles C. Jessen, Oakland, Cal. Filed Feb. 3, 1917.

1,225,047. Cooking Vessel. Henry C. Milligan, Canton, Ohio. Filed May 13, 1915.

1,225,070. Hammer for Overhead Nailing. Samuel Speed, Tatum, Tex. Filed Nov. 28, 1916.

1,225,074. Pliers. Ernest Stead, Binghamton, N. Y. Filed Mar. 31, 1916.

1,225,132. Attachment for Steel Squares and the Like. John H. Johnson, Omaha, Neb. Filed May 2, 1916.

1,225,171. Permutation-Lock. Michael Perreten, Alliance, Ohio. Original application filed Apr. 13, 1916, Serial No. 90,953. Divided and this application filed Dec. 4, 1916.

1,225,216. Fence-Wire Joint. William E. Boyer, Beebe, Ark. Filed Aug. 11, 1916.

1,225,231. Screw-Cap Wrench. Emanuel L. Fenstermaker, Lancaster, Pa., assignor of one-third to Franklin H. Burkhart, Lancaster, Pa. Filed Mar. 1, 1915.

1,225,248. Combination-Range. Roger Hogan, Geneva, N. Y. Filed Oct. 10, 1916.

1,225,256. Splash-Board. Mary Johnston Lambrix, Dayton, Ohio. Filed Oct. 9, 1916.

1,225,285. Door-Holder Device. Claude R. Swaim, Muncie, Ind., assignor to Orin H. McDowell, Steubenville, Ohio. Filed Jan. 20, 1917.

1,225,308. Garbage-Receptacle for Sinks. Julius L. Born, Detroit, Mich. Filed Jan. 26, 1916.

1,225,319. Support for Washtubs. Maurice M. Ely, Clinton, Iowa, assignor of one-half to C. F. Hooks, Clinton, Iowa. Filed Oct. 30, 1913.

1,225,329. Washington-Machine. Guy E. Shepard, Hardwick, Vt. Filed Mar. 10, 1916.

1,225,351. Transom-Lifter. William F. O'Rourke, Chicago, Ill. Filed Aug. 17, 1916.

1,225,380. Lawn-Mower. Howard Warren, Los Angeles, Cal. Filed Aug. 21, 1916.

1,225,381. Gas-Burner. Utley Wedge, Ardmore, Pa. Filed Mar. 1, 1915.

1,225,409. Safety-Razor. Morris Cecil, New York, N. Y. Filed Oct. 9, 1916.

1,225,427. Door-Securing Mechanism. Edward E. Gage, New York, N. Y. Filed June 30, 1916.

1,225,430. Kitchen Utensil. Joseph G. Gavlak, Monongahela, Pa. Filed Aug. 3, 1916.

1,225,435. Window Construction. William F. Hajek, Chicago, Ill. Filed Feb. 29, 1916.

1,225,475. Calipers. Roy Lynn Mossman, Humboldt, Tenn. Filed Aug. 9, 1916.

1,225,480. Hose-Coupling. Frank Nickolai, Julius E. Nickolai and Carl L. Nickolai, De Beque, Colo. Filed June 12, 1916.

1,225,485. Nutcracker. William Johnson Payne, Panther Burn, Miss. Filed Sept. 19, 1916.

1,225,540. Dust-Pan. George Tilley Wells, Providence, R. I. Filed Apr. 27, 1916.

1,225,568. Clothes-Pin. Willie A. Boynton, Newcastle, Tex., assignor of one-half to Geo. A. Terrell, Newcastle, Tex. Filed Sept. 14, 1916.

1,225,601. Stove-Lid Lifter. Laben Staford Edmonds, Chapmanville, W. Va. Filed Apr. 25, 1916.

1,225,638. Fly-Trap. Albert S. Jernigan, Cheyenne, Okla., assignor of one-fourth to J. L. M. Curry and A. J. Smith, Cheyenne, Okla. Filed Dec. 8, 1915.

1,225,708. Nail. John H. Gray, Worcester, Mass. Filed July 26, 1916.

1,225,723. Combination-Tool. Frank Singer, Syracuse, N. Y., assignor to Syracuse Twist Drill Company, Syracuse, N. Y., a corporation of New York. Filed Apr. 24, 1915.

1,225,725. Bail-Ear for Oil-Cans. Charles L. Wagandt, Baltimore, Md., assignor to The National Enameling & Stamping Company, New York, N. Y. Filed Oct. 19, 1914.

WEEKLY REPORT OF TRADE AND THE MARKETS

FEDERAL CONTROL OF STEEL INDUSTRY BECOMES MORE FAR REACHING.

As the Government unfolds its plans for a supreme effort of preparation and aggression in the war, steel needs are piling up at a tremendous rate. New business of a non-war character is being set aside in a corresponding degree, and tonnage already booked is being placed in a more uncertain position, either as regards time of manufacture or of delivery. The Federal direction of production, distribution and transportation is becoming more far reaching and complete accord is being shown by the iron and steel industry.

The large part that the steel industry is expected to fill in the immense ship building program of the Government becomes more apparent as the shaping of these plans proceeds, and it is estimated by leading authorities that the country's full output of ship plates for two years will be required. The sensational announcement that all private contracts for steel would be cancelled in the interest of the ship building program resulted in a panicky demand for deliveries and caused no end of trouble, but at the most, the development was only a flurry. The thing that interests the trade chiefly is the proposed central buying agency for the Allies, which looks toward greater market control, and the question whether further demands in the nature of concessions in prices are to be made. In this connection there is a disposition in some quarters to let the Government take whatever course it deems best, as it is believed that the money will be given to the Government in one form or another, and many of the trade see no difference between concessions in prices and an excess profits tax.

A noteworthy event is the disinclination of the United States Steel Corporation to enter into further advances in prices even to private concerns, and virtually all recent increases in prices have been made by the independents. The Steel Corporation is booked to the limit in nearly all branches, but is out of the market now for nearly all deliveries, even though it could open its books and get the advantage of the present market if it so desired.

The continued rise in pig iron prices is coming in for more thoughtful attention by both producers and consumers in view of the broadening sweep of governmental authority. Sales of certain foundry products for war purposes have been made to the Government, and the abrupt movement of prices is shown by the recent rise of $4.00 in valley bessemer, to $48.00; of $2.00 on Chicago grades, and of smaller advances at Buffalo, Eastern Pennsylvania, Southern Ohio and other districts. Some foundry consumers, discouraged by the high prices and scarcity of early iron, are reducing operations to the extent of their assured supplies of raw materials.

STEEL.

In the Chicago market, hard steel bars, which have been quoted at 3.50 cents Chicago mill, are firmer as the demand for spring construction work involving reinforced concrete becomes heavier. Although business continues to be done at 3.50 cents, some has been placed at 3.75 cents, Chicago. Steel plates continue to be almost out of the question, and buyers find it very difficult to place further tonnage with any makers. It is practically impossible to place large tonnages, and makers are holding back sales, waiting for Government requirements. Quotations range from 5.19 to 7.19 cents, Chicago, according to delivery. As regards structural shapes, present prices seem to have almost swept the market clear of prospective buyers, and only small lots for construction work are being sought. Plain material is quoted at 4.44 to 5.44 cents, Chicago, with mills reluctant to take on further tonnage.

COPPER.

The copper market has been ruling somewhat hesitant, with very little business passing. However, the low prices which were talked of a week or so ago, have vanished and holders of spot copper are holding strictly to their quotations, refusing to offer any concessions. Producers characterize the undertone of the market as firm, but occasional reports are heard that serve to modify this impression. Practically no third quarter Electrolytic appears available at less than 29 cents, cash New York, and other Electrolytic quotations are as follows: Spot and May, 32½ cents, cash New York; June, 32 cents; July, 30½ cents and August, 29½ cents. Prime Lake Copper for prompt shipment is quoted nominally at 32 to 32½ cents. Casting copper is stronger, and for prompt shipment is quoted at about 31 cents.

LEAD.

Extreme scarcity of spot metal continues to characterize the outside lead market, and some holders are asking as high as 11 cents, New York, for spot metal, with future shipments quoted at 10½ cents. Pending the Government's decision as to the amount of lead it will require, the leading interest has been withholding supplies from the market, and independents have been selling carefully. The market is ruling firm, following the leading interest's advance in price from 9½ to 10 cents, and quotations are about as follows: Prompt and May, 10⅜ cents, St. Louis basis; June, 10¼ cents; and July, 10⅛ cents. Chicago warehouses have advanced their prices 25 cents per hundred pounds, the new quotations being $11.50 for American pig and $12.00 for bar, per hundred pounds.

TIN.

The rapid advances of the price of tin of late have been the outstanding feature of the non-ferrous metal market. In the New York market, Spot Straits a short time ago was quoted at 59½ cents and now the price is about 66 cents. The sharp increase is due in part to the duty of 10 percent which is to be imposed on imports, as provided in the war revenue bill. The sharp advances in the London market have also been a factor, and there seems to be no end to the advancing tendency of the market. Chicago warehouse prices have also shown advances, and Pig tin is now quoted at 73 cents and Bar tin at 74 cents a pound, which represents an increase of 3¼ cents from the prices quoted a week ago.

SOLDER.

Solder prices continue to advance, Chicago warehouses announcing an increase of 1½ cents per pound, the new quotations being: XXX Guaranteed, ½ & ½, 41 cents; Commercial, ½ & ½, 39 cents; Number 1 Plumbers', 37 cents.

SPELTER.

In the spelter market, inquiry has been extremely light and little interest is being shown. The most interesting development was the announcement of the zinc committee of the Advisory Board of the Council of National Defense as to what the present requirements of the Government would amount to. Current Prime Western quotations in the general market are as follows: Prompt, May and June, 9¼ cents, St. Louis basis; July, 9⅛ to 9¼ cents; and third quarter, 9 to 9⅛ cents. The Chicago warehouse price on spelter in slabs remains at 10½ cents a pound.

PRICES ON WIRE SCREENS ADVANCE.

Manufacturers of screen doors and window screens have withdrawn former quotations on these products, and have established new prices which show an advance of 10 percent.

TIN PLATE.

Tin plate manufacturers are devoting practically all their time to the urgent needs of the Government, and state that they will be able to meet the demands of packers this year, unless some unforeseen operating difficulty arises. Outbound shipments are much better than previously, and even further improvement is promised. The domestic market is very quiet, and small sales have been reported at as high as $11.50 base. Chicago warehouses have made advances on first quality bright tin plates, ranging from $1.45 to $5.30 per box, and the new quotation of IC, 14x20 is $13.70 per box, and on IXXXX, 20x28, $40.10 per box. Coke plates have been advanced $2.00 per box, and the new quotation for cokes, 180 pounds, 20x28, is $23.80.

OLD METALS.

The market on iron and steel scrap in Chicago is comparatively quiet, but the disinclination of consumers to buy has not weakened prices, and advances continue on a number of grades. A large demand on the part of ordinary consumers, together with rumors that users of heavy steel scrap are about to enter the market, have held the situation firm. Wholesale dealers' quotations, which may be considered nominal, are as follows: Old steel axles, $40.00 to $41.00; old iron axles, $39.00 to $40.00; steel springs, $27.00 to $28.00; Number 1 wrought iron, $30.00 to $31.00; Number 1 cast iron, $20.50 to $21.00, all net tons. Prices for non-ferrous metals are as follows per pound: Light copper, 24½ to 25 cents; light brass, 14¾ to 15 cents; lead, 9 to 9¼ cents; zinc, 7 to 7½ cents; cast aluminum, 35 to 36 cents.

SHEETS.

With few exceptions, manufacturers of steel sheets have withdrawn from the market, and the surplus tonnage has been absorbed by the Government. Inquiries are numerous but not many sales are being made. In Chicago the recent action of the Government to bring a better supply of sheet bars to mills in the effort to increase the supply of material has not affected sheet prices, which remain very strong. 28 gauge black sheets and 10 gauge blue annealed sheets are quoted at 6.69 to 7.19 cents, Chicago, and 28 gauge galvanized sheets are selling at a range of 9.19 to 10.19 cents, Chicago. The demand is strong and many consumers are seeking heavy tonnages with little success. Warehouse prices for 10 gauge blue annealed sheets remain at $7.00 per hundred pounds, and for 28 gauge black sheets at $8.00 per hundred pounds, while prices of galvanized sheets have been advanced from 15 to 25 cents per hundred pounds, and 28 gauge is now quoted at $10.00.

PIG IRON.

In the Chicago district, with large inquiry continuing and heavy sales resulting, makers of Northern pig iron have advanced their quotation $2.00 per ton, making the price $44.00 furnace for the last half of 1917, and $41.00 furnace for the first half of 1918, these prices applying to foundry, malleable and basic grades. The new levels are apparently well established and consumers are realizing that they must make contracts now, as they may be unable to obtain iron later. Although a few melters believe that there will be sufficient iron for all users, whether bought now or later, evidence has accumulated to indicate that a real shortage is likely and that those who delay may be unable to cover their needs. Southern iron is very difficult to obtain for prompt delivery, and $38.00 Birmingham appears to be the minimum. Lake Superior Charcoal iron continues at a range of $49.25 to $51.75 delivered Chicago, with a limited supply.

Rogers, Brown & Company Market Report, Cincinnati, Ohio, May 19, 1917:

The open inquiry for foundry iron is comparatively light, but reports from different sources indicate that quiet buying has been heavy, especially for next year's shipment. Southern Number 2 foundry for the first half now has a range of from $36 to $40 Birmingham. Northern foundry is firm at $42 Ironton for that delivery, and for this year the minimum quotation is now $43.00. Basic and malleable are following in the footsteps of foundry. The scarcity of malleable in all districts is well known to the trade.

Current Hardware and Metal Prices.

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing Western Hardware and Metal prices corrected weekly.

METALS.

PIG IRON.

Basic	$43 00
Northern Fdy., No. 2..	43 00
Bessemer	$45 00 48 00
Souther Gray Forge	38 50- 40 00
Southern Fdy., No. 2	40 00- 42 00
Lake Sup. Charcoal	49 25- 51 75
Malleable	43 00

FIRST QUALITY BRIGHT TIN PLATES.

		Per Box
IC	14x20	$13 70
IX	14x20	15 50
IXX	14x20	17 35
IXXX	14x20	18 70
IXXXX	14x20	20 05
IC	20x28	27 40
IX	20x28	31 00
IXX	20x28	34 70
IXXX	20x28	37 40
IXXXX	20x28	40 10

COKE PLATES.

Cokes, 180 lbs	20x28	$23 80
Cokes, 200 lbs	20x28	24 00
Cokes, 214 lbs	IC 20x28	24 30
Cokes, 270 lbs	IX 20x28	26 15

BLUE ANNEALED SHEETS.

No. 10 per 100 lbs.	$7 00
No. 12 per 100 lbs.	7 05
No. 14 per 100 lbs.	7 10
No. 16 per 100 lbs.	7 20

ONE PASS COLD ROLLED BLACK

No. 18-20 per 100 lbs.	$7 80
No. 22-24 per 100 lbs.	7 85
No. 26 per 100 lbs.	7 90
No. 27 per 100 lbs.	7 95
No. 28 per 100 lbs.	8 00

GALVANIZED

No. 16 per 100 lbs.	$9 25
No. 18-20 per 100 lbs.	9 40
No. 22-24 per 100 lbs.	9 55
No. 26 per 100 lbs.	9 70
No. 27 per 100 lbs	9 85
No. 28 per 100 lbs.	10 00
No. 30 per 100 lbs.	10 50

POLISHED SHEET STEEL.

No. 24 per 100 lbs.	$8 55
No. 26 per 100 lbs.	8 60
No. 27 per 100 lbs.	8 65
No. 28 per 100 lbs.	8 75

SMOOTH SHEET STEEL.

	Per 100 lbs.
Wood's Smooth No. 20	$8 15
" " No 22-24	8 20
" " No 25-26	8 25
" " No. 27	8 30
" " No. 28	8 40

PATENT PLANISHED SHEET IRON.

Patent Planished Sheet Iron, 100 lbs	$12 00

SOLDER.

XXX Guaranteed ½ & ½ per lb.	41c
Commercial ½ & ½ "	39c
No. 1 Plumbers "	37c

SPELTER

In Slabs	10½c

SHEET ZINC.

Cask lots	$22 00
Less than Cask lots	$22 50 to $23 00

COPPER.

Copper sheet, base	40c

LEAD.

American Pig	$11 50
Bar	12 00
National (White) brands (in less than 100 lb. lots), per lb.	11c
Sheet. Full coils per 100 lbs.	$12 50
Cut coils per 100 lbs.	12 75

ALUMINUM

Carload lots. No. 1 Pure Ingot per lb.	$0 60
Sheets "	75

TIN.

Pig tin per lb.	73c
Bar tin "	74c

HARDWARE.

ADZES.

Carpenters'. Plumbs	35%
Coopers'. Barton's	15%
White's	15%
Railroad. Plumbs	35%

AMMUNITION.

Caps, Percussion—per 1,000. F. L., Waterproof, 1-10s	50
G. D.	45
Musket	75
Shells, Loaded— Loaded with Black Powder	7%
Loaded with Smokeless Powder, medium grades	15&5%
Loaded with Smokeless Powder, high grade	30%
Winchester: Smokele s Repeater Grade	15&5%
Smokeless Leader Grade	30%
Black Powder	7%
U. M. C. Nitro Club	15&5%
Arrow	30%
New Club	7%

Gun Wads—per 1000 Winchester 7-8 gauge	$2 05
" 9-10 gauge	1 80
" 11-28 gauge	1 50

Powder.	Each.
DuPont's Sporting, kegs	$10 25
" " ½ kegs	5 40
" " ¼ kegs	2 85
DuPont's Canisters, 1-lb	56
" " ½-lb	32
" Smokeless drums	43 50
" " ½-kegs	11 25
" " 10-can drum	9 00
" " ¼-kegs	5 75
" " canisters	1 00
L. & R. Orange, Extra Sporting kegs	$10 25
L. & R. Orange, Extra Sporting ½-kegs	5 40
L. & R. Orange, Extra Sporting ¼-keg	2 85
L. & R. Orange, Extra Sporting 1 lb. canisters	56
L. & R. Orange, Extra Sporting ½-lb. canisters	32
L. & R. Orange, Extra Sporting ¼-lb. canisters	18
Hercules "E. C." and "Infallible" drum	$43 50
Hercules "E. C." and "Infallible" ½-kegs	11 15
Hercules "E.C." and "Infallible" 10 can drums	9 00
Hercules "E.C." and "Infallible" ¼-kegs	5 75
Hercules "E.C." and "Infallible" canisters	1 00
Hercules W. A. .30 Cal. Rifle, canisters	$1 25
Hercules Lightning Rifle, canisters	1 25
Hercules Sharpshooter Rifle, canisters	1 25
Hercules Unique Rifle, canisters	1 50
Hercules Bullseye Revolver, canisters	1 00

Shot.	
Drop shot, sizes smaller than B 25-lb. bags, per bag	$2 70
Drop shot, B and larger sizes, 25-lb. bags, per bag	2 95
Buck shot, 25-lb. bags, per bag	2 95
Chilled shot, 25-lb. bags, "	3 25

ANVILS.

Trenton, 70 to 80 lbs	9½c per lb
Trenton, 81 to 150 lbs	9½c per lb

ASBESTOS.

Board and Paper	17c per lb.

AUGERS.

Boring Machine	70%
Irwin's	50%
Carpenter's Nut	70%
Hollow. Bonney's—list $30.00	75 & 5%
Stearns, No. 3	36 00
Post Hole. Digwell, 8-inch per doz.	12 50
Iwan's Post Hole and Well	40%
Vaughan's, 4 to 9-in. per doz.	8 00
Ship. Ford's, with or without screw	50%
Snell's " " "	40-5%

AWLS.

Brad. No. 3 Handled per doz.	$0 45
No. 1050 Handled "	95
Shouldered, assorted 1 to 4, per gro.	3 60
Patent asst'd, 1 to 4 "	60
Harness. Common "	95
Patent "	90
Peg. Shouldered "	1 50
Patent "	65
Scratch. No. 1 handled per doz.	7 00
No. IS, socket han'ld. "	1 25
No. 7 Stanley "	1 95

AXES.

Boy's Handled. Lippincott, 3 lb. per doz.	$6 00
Marshall Falls City "	5 00
Magara "	6 50
Broad. Plumbs, West, Pat	33⅓%
" Can. Pat	35 %
" Firemen's (handled), per doz.	$19 00
Plumbs, Miners' (handled) "	9 00
Single Bitted (handled). Warren Silver Steel	$10 50
Warren Blue Finished	10 50
Rough Rider	9 00
Perfect Premier, Forest Clipper	8 50
Single Bitted (without handles). Warren Silver Steel	$9 00
Warren Blue Finished	8 00
Rough Rider	7 00
Double Bitted (without handles). Blood's Champion, 3½ to 4½ lb per doz.	12 50
Flint Edge "	11 50
Perfect Premier "	12 50

The above prices on axes of 3 to 4 lbs. are the base prices.
3½ to 4½ lbs. advance 25c.
4 to 5 lbs. advance 50c.
4½ to 5½ lbs. advance 75c.

BAGS, PAPER NAIL.

Pounds	10	16	20	25
Per 1,000	$2 50	3 75	4 50	5 00

BALANCES, SPRING.

Pelouze	20%

BARS, CROW.

Pinch or Wedge Point, per cwt.	$4 00

BASKETS.

Clothes. Small Willow per doz.	10 00
Medium " "	11 00
Large " "	13 00

Galvanized Iron.	½ bu.	1 bu.	1½ bu
Per doz.	$5 50	8 00	11 00

BEATERS.

Carpet.	Per doz.
No. 13 Tinned Spring Wire	$ 0 90
No. 11 Spring Wire coppered	1 30
No. 10 Preston	90
Egg.	Per doz.
No. 50 Imp. Dover	$ 0 75
No. 102 " " tinned	90
No. 150 " " hotel	1 50
No. 10 Heavy hotel tinned	2 10
No. 13 " " "	3 30
No. 15 " " "	3 60
No. 18 " " "	4 50

BELLOWS.

Blacksmiths'	65%
Hand. 8-inch per doz.	7 50
10-inch "	9 40
Moulders'. 12-inch "	12 60

BELLS.

Call. 3-inch Nickeled Rotary Bell, Bronzed base per doz.	$5 00
Cow. High Grade	60%
Kentucky	65&10%

Door.	Per doz.
New Departure Automatic	$6 50
Rotary.	
3 -in. Old Copper Bell	4 00
3 -in. Old Copper Bell, fancy	6 00
3 -in. Nickeled Steel Bell	4 50
3½-in. Nickeled Steel Bell	5 00

Hand. Hand Bells, polished	40&10%
White Metal	40%
Nickel Plated	30%
Swiss	40&33⅓%
Silver Chime	33⅓%
Miscellaneous. Church and School, steel alloy	50%

Farm, lbs	40	50	75	100
Each	$1 90	2 40	3 55	4 75

BEVELS, TEE

Stanley's, rosewood handle, new list	Nets
Stanley's iron handle	Nets

BINDING, OILCLOTH.

Zinc	70%
Brass	60&5%
Brass, plated	75%

BITS.

Auger.	
Extra Double Spur	70&10%
Ford's Car and Machine	40&10%
Ford's Ship	50%
Irwin	50%
Russell Jenning's	30&10%
Clark's Expansive	65%
Steer's " Small list, $22 00	25%
" " Large " $26 00	25%
Irwin Car	50%
Ford's Ship Auger pattern Car	50%
Center	15%
Countersink. No. 18 Wheeler's per doz.	$1 80
No. 20 " "	2 40
American Snailhead "	1 10
" Rose " "	1 30
" Flat "	1 20
Mahew's Flat "	90
" Snail "	1 40
Dowell. Russell Jennings	30&10%
Gimlet. Standard Double Cut	40%
German Pattern per doz.	$0 60
German "	65
Gouge "	80
Spoon "	15%
Countersink "	1 30
Reamer. Jenning's Square "	2 50
Standard Square "	2 00
American Octagon "	1 75
Screw Driver. No. 7 Common "	55
No. 1 Triumph "	1 25